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Original Articles

INTERNAL SECRETIONS

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The numerous references already made before this convention to the internal secretions shows that the mind of the profession is thoroughly alive to the importance, and one might say the growing importance, except that the importance has always been there, of this subject.

Just how important is it? The body may be presented as a trinity—a mechanism for mechanical balance (bones, muscles, cerebro-spinal nerves, etc.), a mechanism for nutritional balance (alimentary tract and glands, vasomotor nerve mechanism, etc.), and a mechanism for chemical or vital balance, consisting of the organs of internal secretion, the blood which they elaborate, and, I believe, an autonomous nervous system tributary thereto which will prove to be largely distinct in structure and in function from the other two. This neglected one per cent of our study will grow to be the major two-thirds of it.

The spirit of this meeting is practical. We are all bathed in it here in the "Old Doctor's" home. We all have our notion of what the most practical thing for us really is. Let me, in my turn, present to you my conception. Osteopathy has one procedure of marvellous simplicity by which it succeeds in curing disease. It removes lesions; lesions of structure, of abuse of function, or of nervous overflow from various causes in the nervous system—dynamic lesions, as we might call them, which we disperse. These are in effect all one thing. Our experience has taught us that any of them may be the cause of any given condition—that in some way they are equal to the same thing, and equal to each other.

But if this is the case, it also means that since any disease can be caused by our simple anatomical lesions, there must be the same fundamental similarity in all diseases—they must be at bottom one, and differ only superficially. Our experience proves that there is that unity in all diseases. It shows that in some way lumbago and whooping cough are the same biological disturbance, differing only physiologically. But we must be able to demonstrate this in terms of the diseases as well as in terms of our success; for without that we are merely an empyrical science—a little less empyrical than medicine or hydrotherapy, but in the same class with them.

Partly with this idea in mind, I began a systematic comparison of diseases to find out their common features, or rather I began this from the point of view of a lazy student—to diminish the amount of memory labor. But I was justly punished; because the discoveries that began to come out of that study gripped me and have not "turned me loose" yet. I soon began to realize that beneath the chaos of symptoms there was a simple system—and then an understanding of nature began to be born in me that showed that *there must be* this simplicity—that there was complexity only

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in our fragmentary lazy observation. The idea grew as the work grew, and I began to see that what the osteopathic success proved was also for its own sake, a thing of great and dramatic simplicity. If it was there it was worth getting, for every possible reason. So that I set about to get it. That seemed to me the most practical thing for osteopathy—to make its theory co-ordinate with its therapy.

I discovered there the absolute simplicity of the processes in disease, and their unity; and I have given explanations from time to time, as well as I could, of that simple process. So far as I know, it has not been done before, and I claim it as an osteopathic discovery. In the articles so far presented the ground of the infections was not covered.

This did not apply to all diseases *except* infective diseases; it applied to them also. In the first place the actual inflammation in infections corresponded with the same processes elsewhere, with a few exceptions. But if you will go carefully over the descriptions of infective diseases in some standard text book arranging symptoms in proper order and placed in parallel columns, you will make an amazing discovery; namely, that in practically all infections there is a definite progress through the same series of events. There is first of all, of course, the incubation with the prodromes, if these are noticeable; onset sudden, usually at night; the onset occurs with chill; developing into nausea; followed by fever; then by one of three things, which seem to be in a measure interchaangeable—sweating, *or* eruption, *or* pulmonary involvement.

If you will then add to your tables of symptoms the occasional variations of symptoms found you will further discover that any form or variety, any variation or complication that occurs in one may occur in any other of these diseases. You may have pustules like those of small-pox occurring in measles or scarlet fever; you may have the rose blush of scarlet fever in diphtheria; you may have the membrane of diphtheria "complicating" measles; you may have the photophobia, the parotitis, the orchitis, the renal involvment, in any of them. In current medical literature are to be found many reports of what are regarded as bizarre occurrences of this kind. Each of these diseases is known by its more prominent features; but according to the evidence of the texts, when properly compared, these are merely more prominent, not different. In my limited experience, the symptoms are practically all present in each, but some so slight perhaps as to escape notice unless search be made for them.

I have particularly noticed the great sensibility of the larynx, because that is always elicited by stimulation of the fourth dorsal nerves. This is characteristic of whooping cough, but it is present, mild or severe, at some stage of probably every case of infection and most cases of disordered metabolism that I have examined. So the nausea is most severe in yellow fever, possibly; but is present in all. The sweating is pronounced in malaria, but in all it signifies the cessation of the attack, the return to normal. The eruption is most severe in small-pox, but is present in all except where sweating has occurred. So the pulmonary involvement is typical of pneumonia—or should we say that we give the name pneumonia to the condition when lung involvement supercedes; but it is a threatened complication in all, especially if the eruption (or possibly the sweating), is "driven in" as by exposure to cold. But it seldom occurs if sweating or eruption develop and follow a natural course. We may have both, I believe, but one tends to cease when the other is established.

Indeed, this is true of all of the stages of the disease—or perhaps we had better use the plural still—the diseases; each stage tends to cease more or less abruptly as the next begins; even the last stage,

the stage of recovery, as seen most typically in pneumonia. The suddenness of the changes, the cleanness with which they are apt to succeed each other, is seen most noticeably in malaria; but it is present in all. The fever in all tends to drop as the eruption is declared.

There are other features of these diseases, as the leucocyte, lymphoid, cardiac, renal, and other involvements, and as the sequelae. I have not made a comparative study of them, but I have little doubt that a study of them will be rewarding in the same way.

Now, if you will turn again to your descriptions, you will be able to note another uniform matter, a definite downward progression in the events of these diseases. The initial coryza begins in the upper respiratory passages, and progresses downward, typical of measles; then after it has gone a certain distance, the skin eruption begins; and it, too, begins high up, around the roots of the hair and on the forehead, and it, too, spreads downward. Strangely enough, the same thing is apparently true of the nerve centres involved. If you will in your osteopathic examinations make them so as to cover this point, you will note—or at least I have noted, and believe that you will—a downward progression of events there, too. In the "cold" stage it is always the upper cervical centres that are involved and sore, the muscles around the atlas that are contracted. In the nausea stage it is the third cervical centre in my experience that is affected unless the irritation be from the stomach direct. When the stage of sweating or eruption of pulmonary involvement is reached, (and pulmonary in this case means pulmonary mechanism as a whole—larynx, bronchi, and lungs), it is always the fourth dorsal centres. Indeed, you may notice that the sensitiveness in one tends to diminish as that in the lower one begins. This is not always the case, for in small-pox, the initial pains are at the eleventh dorsal, as they are also in typhoid, yellow fever, and other very severe fevers.*

What do these things mean?

One meaning that stands out clear from it all is that the diseases represent an affection of a very definite mechanism in the body. Equally beyond a doubt this mechanism is the Autoprotective Mechanism of Sajous—first described as a cognate unit by him, consisting of the ductless glands, under the governance of the pituitary or supra-renal capsules. The evidence of that fact has been so thoroughly presented by him that I will not go over it now. It devolves upon us to study it from the mechanical point of view. My own reasoning, such as is presented here, was done many years ago, long before I heard of Sajous; from whom I got only the identification of the organs connected with these centres that I here describe, whose functions are strained or abused in the infections, together with much corroboration and encouragement.

Another meaning is also clear; that though the germs may have power to irritate the mechanism, their power to produce disease is dependent on that, and is no more nor less than that of any other agent that can irritate that mechanism. There is no such thing as a specific germ.

Another meaning that I think the evidence holds is that the difference between one disease and another is not the difference of kinds and qualities of irritation from the different germs, but is different physiological properties and functions of this mechanism. The different diseases express different physiological properties. And we have another way to study the organs themselves; namely, through their diseases. Many different germs can cause the same affection, as in typhoid; and many cases occur without discoverable germs.

[My experience in this covers two cases of typhoid, two of dysentary, two of yellow fever, one of small-pox and two of severe chicken-pox in adults; and numerous cases of aborted infections.]

It is impossible to think of either germs or their toxines as having synchronous action—a hundred million germs all sporulating within the minute as it is said they do in malaria; or a toxine suddenly changing its character throughout the whole body in a few seconds or minutes, as in the passing from one stage to another in all of these—witness, for instance, the crisis of pneumonia. It all points rather to different physiological properties making the distinction between one disease and another, and one stage and another.

The minute that this idea is broached—and I shall assume that it carries conviction, for the sake of argument—a perfect cyclone of suggestions of wonderful possibility suggest themselves. To mention one: If the sudden contraction of the spleen throws out red blood cells all passing through a certain stage of evolution, that stage of evolution must have more to do with processes in the body than with processes in the parasite. Are the flagellae in malaria merely threads of fibrin? Is the segmentation of red cells possible when they undergo inflammation while forming, just as other cells do in like case show a tendency to proliferate?

If you will allow me to mention another suggestion that has always seemed to me to offer wonderful possibilities to the research laboratories—what is the origin of the diplococci that form with such more than normal rapidity in the lung and in the spinal membranes in inflammations of those structures? Why is it always a certain type of germ that is found in a certain locality? Is there no other explanation for the fact than the supposed selective affinity? Has the body not a diplococcus in itself somewhere, that in inflammation could do as all cells do, that is proliferate rapidly, break loose from the resident tissue, and float around in the excretions? Being formed so rapidly they are less perfect and smaller; they bear the same relation to the normal cells that tumor cells bear—except that they are enormously farther from the normal. Especially under the influence of the powerful adrenalin and the equally powerful nerve stimulation they would tend to proliferate, as Dr. Carrell in the Rockefeller Institute and his co-workers have shown.

Let us continue our osteopathic examination. We can note, if we compare sufficiently large number of cases at the same time, that the same centres are sensitive in all infections; they are chiefly the fourth dorsal (and here let me pay a tribute to Dr. Hildreth, the Father of the Fourth Dorsal!) and the third cervical and the eleventh dorsal. These three are the great and important centres of this mechanism. There are others, as the posterior mastoidal nerves and the area over the bridge of the nose, pointing, I believe, to the pituitary body and its intra-cranial centres. There are also at the eighth dorsal and second lumbar, perhaps also the second sacral, less important centres.

The third cervical I believe to be connected with the thyroid gland, because I always find a strap-like contracture from third to occiput on the left side in cases of goitre. So much so that if I find this singular unilateral contracture I look for thyroid enlargement and even if I do not discover enlargement, yet suspect a difficulty with the thyroid function. I am seldom able to relieve the enlargement except temporarily through this centre.

The fourth dorsal, especially the right side, I believe to be the general balancing centre of this whole mechanism, where centres for the pancress, spleen, digestive organs, lungs, skin, brain, eyes, and possibly many other organs, are found. Other centres of this mechanism may escape, this seldom escapes. The evidence by which these centres were determined was gathered from clinical experience for several years and I feel fairly sure of the ground. Most cases of spinal curvature begin at this point.

The eleventh dorsal centres are affected equally on both sides, as a rule, and they undoubtedly connect with the adrenal bodies. In some cases we are apt to have one side affected more than another, as in appendicitis the right side seems to be the chief source of the difficulty. But this is not a rule. What these peculiar *unilateral* contractures may mean I know not—I merely record the facts as I have noted them.

I regard abuses of function as on a par with the osteopathic lesions in the production of diseases. The abuses that are most frequently found in connection with this mechanism are first toxines, of course-germ, auto, or exogenous poisons. That matter is so thoroughly discussed by Dr. Sajous that it is unnecessary to discuss it here.

Next in importance in my experience probably rank disorders of the genital functions, as in menstruation, menopause, pregnancy, abuses and diseases of the genital organs.

Atmospheric conditions are the most continuous factor that affects them; and it has seemed to me that every different atmospheric condition has its own peculiar effect on them. Of all the patients who come in during a spell of difficult weather of any sort, most of them have the same peculiar disturbance, in addition to the one that belongs to the disease they are suffering from.

Food appears to have a great deal to do with the behavior of these organs, but the relation of food to them is largely an individual problem; few general rules can be laid down, at least in the present state of our knowledge.

Lastly—and this factor is by no means to be despised—the psychic influence is very potent. When it is considered that the brain absorbs one-eighth of all of the blood in the body, and probably a much larger proportion of the energy—when it is recalled that the brain has absolutely the first claim on all food that is eaten, that its function varies more rapidly and tremendously than all of the rest put together, that the enzymes must be regulated mainly with regard to its needs and uses, it is seen what a broad basis for the study of psychology there is in connection with them.

Having defined with clearness the centres that control the autoprotective mechanism, I then began to observe that there were very few conditions of any kind in the body in which it was not involved in some way. My technique of treatment for the last two years has been largely based on this discovery; and I find that the results obtained do most highly justify the conception I hold of its importance. In the infections it is typically involved. But I will refer also to some of the other conditions in which it is pronouncedly important. We have a very wide field to cover; for this is the essential factor in hay fever, asthma, epilepsy, St. Vitus' dance, in rheumatism and gout, in diabetes and Bright's disease and a host of others. I must confine myself to a few illustrations.

In rheumatism, for instance, thought to be due to an excess of the secretion of the adrenal bodies, I find the important lesions to be at the eleventh dorsal and below—chiefly below. The first symptoms of the disease show themselves, however, usually in the right shoulder, under the deltoid; whence they may switch to any other joint. The reflex here is from the fourth dorsal segments, via the second. There are a great many conditions of brachial neuralgia that prove to be nothing else than the beginning of rheumatism, a condition for which I have been compelled to coin the name Rheumatoid Neuritis. This condition frequently follows the acute infections, menopause, or other affections of this mechanism.

I may be criticised, as other have been, for the emphasis I place on this particular centre: but this is my belief based on study and experience. I see no good reason why one part of the spine should not be more important than another;

and that most important point I believe to be this fourth dorsal; and I lay especial stress on the right side of this segment. You may remember the findings from the statistical research into asthma, in which this centre was shown to be so important.

Tuberculosis is very closely akin to asthma, and in tuberculosis this centre seems to be the most important centre. In this opinion, the clinical reports so far published by the A. O. A. bear me out. I have seen a score of cases diagnosed by medical doctors as tuberculosis in which pressure at the fourth dorsal centre would elicit a cough; removal of the pressure allowed the cough to subside; pressing again the cough would recur. Whether the tubercular infection was actually present, or not, I do not know. But I do know that correction of this lesion promptly relieved all symptoms, and they have not recurred.

In an epidemic of diphtheritic sore throat that occurred in Jersey City, the past spring, I was called in to see an Italian woman in the acute stage of the infection. She, when I got there, was suffering nausea, abdominal pain, cardiac excitement, sore throat and swollen tonsils. I treated nothing at all but the eleventh dorsal centre; and in about twenty minutes all pain had ceased, the nausea was controlled, the headache gone; nor was there any recurrence of these symptoms at all. But while I was in the house the other woman was taken violently ill exactly the same way. I also treated her in this manner, and in twenty minutes she too was relieved, nor was there any recurrence of the symptoms. The next morning I myself was taken ill with the same symptoms. I was not able to reach an osteopathic physician until late in the day, and though the acute condition was controlled, it was a week before the effects of the condition wore off. This I mention as showing that the infection was really no light one, yet it was controlled immediately when taken in time by osteopathic means.

Quite different from these was a case of acute melancholia, following amoebic dysentery. Amoebic dysentary is based on a sharp depression of the function of the adrenals. Some depression evidently remained yet, and I think there must have been destruction of one of them, partial or complete. The melancholia marked the stage of insufficient compensation. This was relieved in a few weeks; but there supervened a condition exactly like the so-called typhoid spine, which shows severe contractions of the muscles around the eleventh dorsal, with great sensitiveness of the nerves at that point. Examination directly over the adrenals instantly increased this contracture and pain to an alarming degree. Nor have I found any method for alleviating this condition. Perhaps some of my colleagues can indicate some method that they have found effective.

To show the wide variety of conditions that arise in connection with this mechanism, let me present a case of unilateral facial paralysis, giving a history of extreme dissipation. The centres involved were the third cervical. This case I was able to help but not to cure; but the patient by going to Coney Island and taking baths in the cold water —so long as that water was not frozen over—could keep his face in perfect condition. Cases of emotional disturbance or mental strain can almost be picked out after other conditions are eliminated by the massive contractures, or in chronic cases the fine wire-like contractures, central around the fourth dorsal centre. Sometimes, indeed, it goes farther than that and results in depression or excitation of the adrenals. These few observations will serve for the present. Let me repeat that there are few cases in the course of a day in which I do not find this mechanism to be important. It grows difficult to think of physiology or pathology or therapeutics, even osteopathic therapeutics, without reference to

this subject. It is destined to become, I believe, easily a half of the education given to students; it is destined to be the basis of the progress of the future, for medicine and osteopathy both; and I see no good reason why with a properly operated Bureau of Statistics we should not anticipate much of the expected progress of the medical world, making many valuable discoveries, or it may be discount altogether much that is offered as fact.

The importance of the mechanism is not lessened by the fact that it has been found to be so easily influenced by osteopathic treatment. That success must be considered just as any laboratory findings are considered. Its proofs may be of greater practical importance.

I was recently called to see a man whom I found shaking with severe chills and pain in his back, shortness of breath, embarrassed heart and imminent fear of death. Finding nothing wrong with the fourth dorsal, I examined the eleventh and he winced. Placing him on his side I found massive contractures about the eleventh on the right side, and placed my fingers over them inhibiting for some minutes; but the chill seemed to get worse. The face was suffused and red, the body doubled over with the chill. Then I noticed the prominence of the lower edge of the eleventh rib. Drawing the knees up sharply and lifting them I distinctly felt the grating and the motion as the rib slipped into place; and instantly the chill stopped, the face lost its flush, the breathing was resumed with a big sigh, the heart became normal. It was not a matter of minutes, nor even of seconds; the relief was instantaneous.

No other conclusion is possible from this case than that the relation of the adrenal bodies to the chill and many other phenomena is nervous rather than through internal secretions. Dr. Still long ago said that the organ was a nervous organ. It is described as having convolutions like the brain. The immense bundle of nerves leaving it would seem to support this view.

I believe, Mr. President, and gentlemen, that I could continue and report very nearly every case that I have had for the past several years, and find something interesting to say about the autoprotective mechanism and these centres in connection with each. I will conclude, however, with one of the most interesting relations of this mechanism, as well as one of the most valuable, verified in not less than twelve cases. Stimulation of the eleventh dorsal segment will encourage menstruation, both as to time and to quantity, stimulation of the sciatic nerve has the opposite effect. When both are treated, the adrenal function seems to absorb the energy of both stimulations. In attempting to limit menstruation, I apply the treatment immediately behind the trochanter, over the great trunk of the sciatic nerve. We reach also the gluteal nerves at that point, but I believe the effect is had through the sciatic, since pain in lower branches of the sciatic nerve is quite usual in abnormalities of this function, as well as after menopause; and is relieved when the abnormality is relieved. I believe many intractable cases of sciatica arise from some abnormal changes in these centres after menopause. (six cases).

In this short address it is impossible to describe many of the cases from which I have drawn my conclusions. Therefore it contains a great deal of "ipse dixit." But in any case, I prefer to make the suggestions merely, and wait for the verification of them at the hands of other men; for science is a centipede, and moves on hundreds of legs.

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INTERNAL SECRETIONS—DISCUSSION

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The paper by Dr. Tucker covers such a broad field and touches upon so many points which only much observation and experimentation will confirm, that it is

difficult for me with my limited experience to offer observations of any great value substantiating or opposing the propositions he has advanced.

That there is an auto-protective mechanism called into operation by certain stimuli, there is abundant evidence; that this auto-protective mechanism is subject to the control of the sympathetic nerves, is probably true; that Dr. Tucker has shown us the keys to that mechanism, we must investigate before subscribing unreservedly to the accuracy of his findings. Clinical data covering a large number of cases and supplemented by laboratory tests will be necessary before definite conclusions may be reached.

In my own limited experience I have observed some peculiar phenomena which seem to bear out the observations of Dr. Tucker. I will mention some of them. One was in a case of pneumonia, with the initial chill at 8 P. M. A medical physician was called at 9 P. M. I was called at midnight, and found the patient in extreme distress, dysponea most marked, heart sounds very loud, coughing continuous, at first with no sputum but later with the characteristic rusty sputum. I worked desperately in the upper dorsal and on the pneumogastric for fully forty minutes without appreciable effect. I then produced firm pressure directly forward on the spine in the lower dorsal for the purpose of dilating the abdominal vessels and so drawing the congestion from the lungs. The results came in seconds. The dysponea was relieved, the heart quieted, and the distressing dry cough subsided. I remained with the case four hours, treating every hour, and by morning the case was out of danger and made an uneventful recovery, except for a skip in the pulse beat, which persisted for several days following the severe strain upon the heart. This immediate subsidence of the distressing symptoms may have been due to the work at the eleventh dorsal in its effect upon the suprarenal capsule, as suggested by Dr. Tucker, instead of in dilating the abdominal vessels, as I supposed.

One other case I recall in which pressure applied between the eleventh and twelfth dorsal had a most pronounced effect in relieving an acute abdominal pain of great intensity which morphine failed to relieve. I was never quite satisfied as to just what the pathological condition was, nor as to what I accomplished, except that relief came instantly on application of pressure as mentioned. It required at least twenty minutes of examination and experimentation before I located the lesion. I left the case an hour, when the patient turned over in bed and the pain returned immediately. The second time I knew where to find the lesion, and instantly relieved the pain by the application of pressure as before.

Since receiving Dr. Tucker's paper, I have seen two cases of tonsilitis, and I have confined my work to the third cervical, fourth dorsal, and eleventh dorsal, supplemented by a little work about the hyoid. In each instance the patient went to business the next day.

The view taken of the symptoms of infectious diseases being simply manifestations of the auto-protective mechanism in operation is worthy of much study. If true, and only study and repeated obversations will prove or disprove it, it is a broad basic principle which adds to the strength of the mechanical principle of osteopathy. However, I am not ready to accept the view that there is no such thing as a *specific germ*. It seems to me that insufficient evidence is produced to warrant such a conclusion. It is undoubtedly true that all germs act as a stimus upon the auto-protective mechanism in the same way, and that the variations noted in the symptoms represent the different results of the auto-protective mechanism operating against specific toxins. The toxins of all germs, probably being in many respects similar, call forth practically the same symptoms in each disease with certain symptoms more produced in each, thereby repre-

senting greater activity of part of the auto-protective mechanism in meeting the conditions imposed by certain toxins than by others.

As for the third cervical, I have often found it tender, but have not discovered lesions there as frequently as at the occiput, atlas or axis. I have seldom in practice sought for centers as such alone, unless it were to test out some theory or suggestion. My work has been largely an endeavor to view the structure as a whole and to correct any deviations that I might find. The results I have obtained come largely through such procedures. The application of pressure in the lower dorsal in the case of pneumonia just mentioned was made to test Dr. Burns's experiments as to the dilation of the abdominal vessels, and it proved of value to the case in hand. I have tested the same procedure without any appreciable result in pneumonia after the stage of acute congestion when consolidation had occurred.

In a series of spinal adhesive tracings, I have observed that the eleventh was affected either at the beginning of a series of vertebrae out of alignment or at the convexity of a curvature. The twelfth dorsal has functions and movements similar to the lumbar, so the eleventh becomes the key to the dorsal, being the foundation vertebra of the dorsal area. It may be for this reason that it is of so great clinical importance. The fourth, much the same as the eleventh, I have often observed by this method as the point of a changed alignment.

The unilateral contractures mentioned, I have observed, the contraction being on the side toward which the rotation of a vertebra occurs in the dorsal area. Whether the contraction is responsible for the lesion or the rotation for the contracture, I cannot tell.

I believe Dr. Tucker's trinity in man with its mechanical, nutritional and chemical balance to be correct. There might be added a psychic or mental balance. The unity of symptoms in the infections may be observed by the comparisons Dr. Tucker has suggested, and I believe that this is an important point in the proof of the operation of the auto-protective mechanism against any stimulus which is recognized as a factor in disease.

Dr. Tucker mentions the factors of disease besides the osteopathic lesion as being abuse of function, atmospheric abuse of function, and psychic influence Of these I believe that, outside of the osteopathic lesion, food is the most important cause of disease, with possibly abuse of function, and phychic influence last. As for atmospheric conditions I consider them of minor importance, as with proper food and proper structural integrity the body will be able to react normally to varying atmospheric conditions.

In rheumatism I find the lesion at the eleventh and twelfth dorsal. Dr. Tucker accepts the view that this disease is caused by the effect of the lesion on the adrenals. I have thought it was through the effect of these lesions on the liver in the production of urea as pointed out in the article published in the January, 1913, A. O. A. Journal. I have noted the frequency of pain in the right shoulder and my observations have been that it is due to lesion of the third rib on the right side rather than to the fourth dorsal. However, it is possible with both Dr. Tucker and myself, as well as with other observers, that we are more apt to find what we are making a special search for.

In some cases of tuberculosis I have noted the fourth dorsal as eliciting a cough upon pressure.

Every bodily function is based upon the operation of a certain definite mechanism, and I believe that Dr. Tucker has suggested that it is important to study nerve centers, clinically and experimentally, and to understand as far as possible the functions of the centers and the results of lesions or other influences upon them. If every observation of every osteopathist, gathered day by day and correctly recorded, could be classified, it

would be of equal value to the profession as that of animal experimentation.

The Research Institute will no doubt be made a clearing house for osteopathic knowledge, and with the co-operation of the individual practitioners meet the need of the profession in the accumulation and classification of clinical data.

DISCUSSION

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Dr. Tucker's address is highly suggestive and of great value. It is to be hoped that the various lines of thought suggested may be more fully developed. There is such an abundance of material that one scarcely comprehends its full significance, unless much time is spent on each phase of the subject presented.

The first question which presents itself is that of the extent to which the mechanism of internal secretions is interposed between the lesions in the spine and the parts affected by the disease. In the past we have usually considered the action of the nerve directly on the tissue; now it is suggested that a secretive mechanism is first affected by the lesion and that the disturbance of the secretions results in weakened tissue and therefore become subject to disease.

To define clearly the limitations of this mechanism and ascertain to what extent the tissues are dependent upon it for their health, is no small task. The evidence so far collected by various writers on this subject would indicate that it plays an important part in various constitutional disorders, such as rhematism, diabetes, rheumatoid arthritis, etc., and that it is the chief protective agency against the invasions of infectious and contagious diseases.

To be of any real value, the definite conclusion concerning the part played by this mechanism in these two important classes of diseases, can be based only on extensive information.

It is contended by various writers that the oxidizing power of the blood in the tissues and the power of the white cells to destroy bacteria are both dependent upon a substance secreted in the adrenal glands, and that this secretion is in some way influenced by a secretion of the thyroid gland through the pituitary body in the brain. It is plain to be seen that if this is the case diseases due to lack of proper oxidation, such as diabetes, might be entirely corrected by an increase of this secretion. It has long been known that in at least a majority of the cases of diabetes mellitus under osteopathic treatment a posterior condition of the lower dorsal has been present, and that the correction of this lesion has stopped the elimination of sugar and removed the distressing symptoms which occur in this disease.

It is also known that the adrenal bodies have a very elaborate nerve supply from the solar and renal plexuses, connecting through the lower splanchnics with the lower dorsal region. The relation of this lesion in the lower dorsal to this mechanism of internal secretions is thus fairly well established. The fact that the oxidation of the sugar in the system is the important factor in diabetes makes the theory seem at least plausible. As the renal or least splanchnic seems to supply the area of the kidneys, it probably carries fibres which supply the adrenals. This will explain the fact that the lesion is most frequently at the eleventh dorsal, though it is anatomically possible to have a lesion of any one of two or three vertebrae affect these nerves.

In cases of rheumatism we would expect either a similar lesion or a combination affecting the secretions of this gland and possibly the other glands. Dr. Tucker's contention that the fourth dorsal is also intimately connected with this mechanism may possibly explain how the character of the symptoms resulting from incomplete oxidation may be made different. We have in rheumatism, for instance, some sort of product of incomplete oxidation which is supposed to be

uric acid, lactic acid or some other substance not yet fully identified. If there is a nerve center controlling the secretion of an oxidizing agent which will remove this substance from the blood and prevent rheumatism, it is of vast importance to our profession and the human race. We have heretofore been compelled to resort to some method of eliminating these undesirable products without altogether satisfactory results. This question furnishes a field for study and development whose value may be of the greatest.

Rheumatoid Arthritis, one of the diseases which has been regarded as incurable, is another of these constitutional disorders that may be more readily amenable to treatment, for its relation to this mechanism can be fully established. Exophthalmic Goitre, or Graves' disease, is supposed to be connected with this mechanism of internal secretions, and is one of the diseases with which osteopathy has accomplished some remarkable results by reducing the thyroid gland and thereby lessening its secretions and preventing the excessive oxidation.

In a previous paper I have suggested that it is possible that many cases of lowered vitality might be due to the under development of the thyroid gland, and that a removal of interferences with stimulation of the blood supply to these under developed glands might do much for the vitality of these cases. To this class of cases probably belong neurasthenic and (possibly) anemic cases. And I wish to emphasize the importance of an examination of the glands in connection with the treatment of these cases. Of course, the essential thing is the removal of the interference with the gland and not the treatment of the gland itself, but it is of the greatest scientific interest to know whether the action of the gland is in any way concerned in the cause of the disease or in recovery from it.

In infectious and contagious diseases there is such a wide difference in the degree of contagion that it is doubtful if all such cases can ever be completely controlled by an internal secretion. But certain infectious diseases undoubtedly can be prevented or quickly terminated by the increased efficiency of the oxidizing power of the blood or the power of the white cells to destroy bacteria. This is notably true in cases of malaria. In my recent practice I have had no opportunity to observe malarial cases, because there is no malarial infection in that locality, but some of the Missouri osteopaths from along the river bottom sections of the state, where they feed people quinine by the teaspoonful, ought to have plenty of opportunity to verify the theory. My experience in early practice was limited to three cases of malaria which promptly responded to the treatment administered. This consisted of a most vigorous treatment all the way from the fourth to the twelfth dorsal. I may have discovered lesions at the time, but it is so many years ago that I do not remember their definite location. It seems a very flimsy basis for a scientific theory, but I am convinced that a more thorough investigation will establish the fact that this mechanism of internal secretions is directly affected by vigorous spinal treatments, even of a general character, and much more so by a definite scientific adjustment of a lesion interfering with the innervation of this mechanism.

The grip, tonsillitis and various other diseases, that invade the system in cases of lowered vitality, will probably be found to be preventable by keeping the body supplied with the right proportions of these secretions. A completer knowledge of this mechanism may be an additional means of maintaining a higher degree of vitality.

This is in line with the teachings of Dr. Still, for he has many times emphasized the control of the nerve supply of the glandular activities of the body, often urging the students of my chemistry classes to turn the fluids of the body, instead of drugs, into the various organs. It also suggests the correction

of lesions and adjustments, removal of interferences, opening up channels of circulation and restoring normal conditions. If we shall gain such a knowledge of these secretions as will render the body competent in the struggle with infective agents and so abolish the use of serum and disillusion people as to the anti-toxin craze, it will be the greatest discovery in the whole range of medical history.

On the other hand, the limitations of any set of glands must be apparent, and if we think that all the problems of human health are to be solved by this mechanism, we shall deceive ourselves. There still remains the greater number of cases that we will be called upon to treat where the effect of the lesion is a direct one. For instance, I cannot agree with Dr. Tucker that a case of facial unilateral paralysis was caused by any derangement of this mechanism. And I think in the great majority of cases of functional or organic derangement of any organ, we are more apt to find the lesion affecting the part as acting through the innervation or the vaso-motor supply of the organ than through the system under discussion. At least this would seem to me more plausable, and until a very carefully developed investigation establishes the facts to be otherwise such will be my contention.

Ellicott Square

DISCUSSION

F. M. Schwartzel, D. O.
Chicago

I have tried for some years to be able to explain some of the results obtained in the treatment of certain obscure conditions which disappeared under osteopathic therapy, but was never quite able to do so satisfactorily until a few months ago, when Dr. Tucker mentioned the eleventh dorsal. In not less than 125 cases within the last seven years in which the patients suffered greatly, I have relieved them by deep inhibition in the eleventh dorsal area. These were cases in which there were colicy pains in the abdomen or muscular cramps of the abdominal wall or of the uterus.

A word about the case of uterine cramps may be helpful because the relief given was so marked The patient was found to be suffering severe pains, and my assistant gave the treatment over the sacrum that we had been taught was the indicated procedure. This method gave some relief. I then noticed that in the region of the eleventh dorsal the muscles were greatly contracted and immediately started inhibiting and stretching alternately at this point with the result that the patient was entirely relieved. She slept the rest of the night, and aside from being somewhat weak was feeling as well as usual the next morning. This was about five years ago, and since that time I have used this method in numerous cases with excellent results, usually giving complete relief and always benefit.

For two years I did this empirically, not being able to determine the reason anatomically for the results when the trouble was located in the viscera or organs. Of course, any muscular contractions of the abdominal wall could easily be explained from this center. It is effective in involvement of any of the abdominal or pelvic organs, the spleen, pancreas, liver, gall bladder, or the adnexa. In any involvment of the abdominal contents, the upper dorsal is also usually affected, but in the pelvic field it is complicated with the last lumbar and the sacrum. In a case, for instance, of an injured testicle, after applying an ice pack locally I treated at the eleventh dorsal and lower sacral region, quickly affording relief to the patient who was suffering greatly when he came into the office. The ice-pack, while it afforded some relief, did not quiet the patient, and as he came to me several times afterward, I had ample opportunity to demonstrate that it was osteopathy that not only made him comfortable, but also reduced the swelling at each treatment.

While I most emphatically endorse all

Dr. Tucker has said, it is my private opinion that while it is very difficult to say which one of the centers—the cervical, the two dorsal or the sacral—is the most important. I find that in practice the eleventh dorsal is involved in practically all cases of severe pain or injury, or in so-called diseases occurring in the abdomen or the pelvis, and that the fourth dorsal or the sacral regions, one or both, is involved with it. So from the standpoint of treatment, the eleventh dorsal, if given first attention, almost without exception, will give first relief to the suffering in these regions.

As the eleventh dorsal is a recognized centre for the abdomen and pelvis, the fourth dorsal for the thorax, neck and head, as treatment given here and followed by treatment in the third and fourth cervical region will afford he relief in these regions. This I have found to be true when treatment in the cervical region alone will not accomplish the results.

The greatest sympathetic center that is amenable to treatment along the spine is undoubtedly the third cervical because of its many connections. It is most significant from the standpoint of the internal secretions because of its direct influence upon the thyroid gland, with which it is intimately connected, and its undoubted influence, through the sympathetic, upon the hypophysis, or test organ, and the adrenals. This to me seems the one great osteopathic center of the future, and as we learn more about stimulations and inhibitions in relation to the internal secretions it will become the master to which the other centers will be apprentice.

The similarity in origin, speaking embryologically, of the medulla, of the adrenals and of the test organ should theoretically explain the profound changes which take place when the harmony of this chain of organs is broken and the closely related symptomatology that ensues in the various conditions which the medical profession has seen fit to differentiate as distinct diseases, the so-called infectious diseases.

We, as osteopathic physicians, have long known the efficacy of our therapy in the treatment of these acute conditions. I hope that by close study and proper scientific application it will not be long before we can be far more useful than any others in this field, and that this knowledge will be the means of placing osteopathy before the public in an indisputable position as to its ability to treat all human ailments—a complete system of practice, as we all know it to be—and hence to refute the dispensers of that calumny, "That osteopathy is all right for some things."

Auditorium Bldg.

EXPERIMENTAL STUDIES OF RENAL OUTPUT

A. Hollands, D. O., and
F. M. Nicholson, D. O.
Report from The A. T. Still Research Institute

Series No. 24.

In this series we are elaborating upon the results accomplished from Series No. 16, which was reported in the Journal of the American Osteopathic Association, Vol. XII., No. VII, and was the work of much effort on the part of Dr. Deason and his assistants.

The object of this series is to determine the output of fluid and solids from the kidneys, as influenced by osteopathic measures, and to determine a specific center for kidney control. Is the kidney center (osteopathically speaking) in the tenth, eleventh and twelfth spinal segments, or is it specifically in the eleventh and twelfth segments? The profession as a whole has long been convinced that treatment in the lower dorsal area has a decided effect upon the output of the kidneys in the various bodily ailments, where an increase in elimination is desired.

The best authorities on research in physiology have proved that the output

from the kidneys is directly proportional to the amount of arterial blood to the glomeruli and secreting tubules; that the amount of solids eliminated is directly proportional to the output of fluid, and, also, that the amount of output from the kidneys varies directly with the systemic blood pressure.

The ratio of the arterial supply to the glomeruli to the venous drainage from the glomeruli, is as 3 to 2 or more specifically speaking, the lumina of the vasa efferentia is two-thirds of the size of the lumina of the vasa afferentia. It has been definitely proved that the osmotic pressure within the secreting tubules is about 30 m. m. of Hg. less than the osmotic pressure within the glomeruli between Bowman's capsule and the vasa afferentia entering the glomeruli which are about 20 m. m. of Hg. less than the systemic blood pressure.

If the pressure within the tubules is raised 30 to 40 m. m. of Hg., the secretion of urine stops, which has been proved by ligating the ureters. Also, if the general systemic blood pressure is lowered 40 to 50 m. m. of Hg., the secretion stops.

It is accepted by such authorities as Cushny, Osler, Emerson and Startling, that ether does not increase the systemic blood pressure, and that it does not increase the amount of output of solids. Cushny states that there may be a slight diminution in secretion. Emerson states that there may be a slight diminution in solids. These statements have been corroborated by J. Deason and L. G. Robb.

This series is being conducted upon etherized animals, and those used in this series are dogs, either males or females, of the average size, and of seemingly perfect health. The animals are kept under careful observation and normalized for a period of several weeks. By this time the dog becomes adapted to the surroundings, thus minimizing the effect of shock and excitement when it is taken to the operating room. The dog is immediately anesthetized and placed upon the operating table. While one operator inserts the treacheal cannula, the other performs the abdominal incision, and cannulates both ureters about one inch from the bladder. The time and number of the drops are taken and immediately weighed to determine the specific gravity. Manipulation is then performed in the region of the eleventh and twelfth dorsal, and after sufficient time, the rate of drops in a given time is again taken, weighed, and compared with the first. In some instances a second manipulation is performed, and the results are compared with the second sample taken.

The following results have been obtained to date:

	Drops in Minutes		Weight in one c. c. of urine
Dog No. 1.			
Before manipulation	20	27	1.032
After "	44	30	1.050
Dog No. 2.			
Before "	26	28	1.020
After "	26	26	1.066
Dog No. 3.			
Before "	15	31	1.053
After "	15	17	1.043
Second "	15	47	1.049
Dog No. 4.			
Before "	36	5	1.027
After "	25	5.5	1.033
Second "	33	5	1.035
Third "	30	13.5	1.040
Dog No. 5.			
Before "	40	7.5	1.021
After "	40	9.5	1.016
No further "	40	11	1.026
Second "	40	13	1.027
Dog No. 6.			
Before "	49	13	1.057
After "	50	25.5	1.078
***Dog No. 7.**			
Before "	20	12	1.044
After "	20	25	1.044
****Dog No. 8.**			
Dog No. 9.			
Before "	40	9	1.020
After "	40	9	1.038
No further "	40	15	1.043

*The spine of this dog was very rigid and no motion could be obtained on manipulation. This probably explains that the osteopathic lesion (rigidity) interfered with the normal nerve impulses which should have resulted from the manipulation.

**In this animal we were unable to obtain any flow of urine whatsoever. The dog had a chill during the early part of the operation, in all probability due to effects of the ether.

A control was run on this series, following the technique described above, but without spinal manipulation. In this control, we found that the variations were in accordance with the results obtained by the various research workers upon etherized animals, in that the amount of urine secreted was slightly decreased and that the amount of solids remained normal or slightly decreased.

The above result is only a preliminary report of a more extensive series of work which is now being carried on, and which will appear in print at a later time.

This series will be continued extensively. We are using many animals for control, and in the final report, the pathology determining the specific spinal center for kidney control will be given.

It seems advisable to make our Journal reports as brief as possible, and leave the details of the work for publication in bulletin form.

Conclusions:

(a) That the amount of solids excreted by the kidneys can be increased by osteopathic measures;

(b) That the specific spinal center for kidney control is in the eleventh and twelfth segments of the cord.

122 S. Ashland Boulevard.

MENTAL LESIONS

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A mental lesion may be defined as any serious departure from the normal functioning of the brain, whether produced directly or by reflex action. When the subject of this lecture was announced you may have been somewhat surprised and asked is this osteopathy? I reply it is. There are mental lesions just as truly as there are bony, ligamentous or muscular lesions; and there is a mental hygiene just as truly as there is a bodily hygiene, and it is just as important. There are right ways of thinking and wrong ways of thinking and we all know of many instances of the wrong way of thinking and of the evil that has followed.

The medical profession has not given mental therapeutics the attention which the subject merits. This fact is being deplored, as a little reading will convince you. Dr. Church, the author of Nervous and Mental Diseases, in an address I heard him give before the Michigan Medical Association, said: "In the past physicians have treated disease almost exclusively from the physical side, but had due attention been given to the mental side better results would have been obtained and there would have been no occasion for the rise of the various mind cure cults that are becoming so numerous." Often I have found statements similar to the above as I have been reading for material for the Department of Mental Therapeutics in the A. O. A. Journal. But we do not have to go outside of our own school of medicine to find statements like the above on this subject. Hulett in his Principles of Osteopathy says:

> The rapid rise of a large number of cults which claim to be able to overcome disease through application of the fact that the mind has a direct influence over the body metabolism is one of the remarkable facts of the last half century. Whether styled Christian Science, magnetic healing, faith cure or simple mind healing, all are based upon the one principle. That cases presenting considerable functional disturbances have been permanently cured under the ministrations of these practitioners is no longer questioned. In all of these systems, absurd as some of their contentions may be, there is an element of truth. That body affects mind and that in turn mind affects body are propositions subject to no dispute. The *extent* of that influence in either case and the possibility of applying it in a therapeutic way constitutes the battle ground of the contestants. At the basis of their philosophy is found a tenet which is fundamental to the osteopathic conception, and that is what has been repeatedly emphasized, that it is the organism and not the physician that cures, and that nature has a remarkable power of self-restoration. The objection to the psychotherapist of the extreme school is that he fails to recognize that there must be

Address before the students of Chicago College of Osteopathy, January, 1914.

a limit and in reaching that limit nature must be aided before further progress can be made. Herein lies the physician's duty.

The study of psychology as now pursued is bringing to light many important facts, but at present, as far as I know, there is but one osteopathic school that includes this study in its curriculum. If you have not done so examine the library of any of our up-to-date normal schools or colleges and notice the great number of volumes on psychology. No scholarly person now denies the fact that body and mind act and re-act upon each other. The question is to what extent do they react and how can it be used in the treatment of disease?

Various experiments have been performed which show that the emotions influence and modify the functions of the body. Anger, it is said, causes a brownish precipitate to appear in the breath; extreme sorrow a gray precipitate, and remorse a pink precipitate. Masso's observations showed that fatigue causes many strange phenomena, such as color-blindness, involuntary movements, hysterical symptoms, amorousness, hallucinations and prolonged after-images. The experiments of others have demonstrated the direct effect of fatigue on nervous conditions and showed that it is not merely physically discomfort, but that it is intellectually and morally dangerous, and has made temptations possible which have cost many a man not only his reputation but also his character.

Henle has demonstrated that depressing emotions increase the contraction of the smooth unstriped muscles of the skin, arteries and bronchial tubes while exciting emotions relax them. Exciting emotions also quicken the circulation and make respiration easier. The above fact suggests that the fear of the asthmatic that he will have great difficulty in breathing helps to bring on that condition; also it suggests that the physician may do something for his patient by reassuring him and quieting his fear, Dubois says: "There are almost no diseased conditions in which the morale remains unaffected and in which the physician cannot be of some help by his clear unswerving assurance." Carpenter, the well-known writer on physiological and psychological subjects, says: "The confident expectation of a cure is the most potent means of bringing it about, doing that which no medical treatment can accomplish, may be affirmed as the generalized result of experiences of the most varied kind extending through a long series of ages."

The exclusive attitude is nowhere justified, for reaction is certain to follow if exclusive attention be given one subject. This seems to me to be the weak point in modern life, also in the work of the specialist. It is one reason why there are so many nervous breakdowns. How often we see it demonstrated that moral victory requires the power to attend to something besides the temptation which threatens to completely engross one. It is a vital matter for the sake of one's freedom, that he give a part of his thought to something aside from an absorbing idea. The single insistent idea, that completely absorbs the thought of the patient, is what the physician meets so often and it requires all his ingenuity to combat. This is one of the chief marks of insanity, and the neurasthenic also presents a good example of what a single insistent pernicious idea will do. Thus in the treatment of neurasthenia one of the important things is to change and broaden the mental life of the patient.

The complexity of life meets us at every turn, and, in our mad rush forward, we often fail of success because we have neglected to take account of some things thought to be of little consequence. We can not afford to regard anything as being of little worth which will be of assistance to us in the battle against disease. Life presents many paradoxes and in considering them one's power of discrimination will often be taxed to its utmost. For instance, the great hind-

rance to motion is friction, and yet without friction there could be no motion Again the skillful management of the memory demands forgetting as well as remembering and detecting what is important and overlooking the unimportant.

Professor James says:

> There is an everlasting struggle in every mind between the tendency to keep unchanged, and the tendency to renovate its ideas. Our education is a ceaseless compromise between the conservative and progressive factors. * * * Hardly any one of us can make new heads easily when fresh experience come. Most of us grow more and more enslaved to the stock conceptions with which we have once become familiar, and less and less capable of assimilating impressions in any but the old way. Old-fogyism, in short, is the inevitable terminus to which life sweeps us on, while genius, in truth, means little more than the faculty of perceiving in an unhabitual way.

Pyschology will be of value to us, in so far as it is able to assist us in solving these paradoxes and helping in tracing out the actual and precise relations involved and discerning the numerous and intricate conditions upon which their solution depends. This brings us to the study of conditions and in the study of conditions very close attention must be paid to, so-called, little things. The one who possesses great knowledge and skill is the one who has paid great attention to details. Our own Dr. A. T. Still gave us osteopathy because he paid attention to those things which others overlooked. We come to understand the principles of life only by working them out and this means particular, careful, persistent, painstaking work.

Not only do mind and body act and react upon each other, but physiological psychology has brought out the fact of the *unity* of mind and body. Psychologists have stated this unity in what they are pleased to term the law of diffusion. Professor James speaks of it thus: "Using sweeping terms, and ignoring exceptions, we might say that every possible feeling produces a movement, and that movement is a movement of the entire organism, and of each and all its parts. What happens patently when an explosion or a flash of lighting startles us, or when we are tickled, happens latently with every sensation we receive."

Mosso's ingenious experiment with his "scientific cradle" is a good illustration of the point under consideration. He placed his subject upon a table so carefully balanced that the slightest increase in weight at either extremity would turn the scales. He found that active thinking by his subject, like solving a problem, would cause the head end of the table to go down at once. When the subject went to sleep and so slight a noise was made as the moving of a chair, this caused brain activity sufficient to cause enough influx of blood to the brain to make the head end of the table do down. This shows that the least mental activity, either feeling or thought, affects the circulation of the blood. Other experiments have been performed in which modifications of respiration, of the activity of the sweat glands, and in a less extent of the movements of the viscera, have been traced.

Again, the results that have been obtained in the physical training department of the New York State Reformatory demonstrate that mental and moral gain follow physical training. Careful records are kept of the men in this prison, in the workshop, in the schoolroom, and in conduct, and all go to show that there is great gain in the mental and moral condition of the men under the physical training methods employed. The close connection of muscular activity and its effect upon the will has been demonstrated many times. In discussing the question Sully puts it thus:

> On the one side attention involves a certain amount of motor innervation and muscular activity. On the other side all voluntary movement involves attention. * * * * All practice in doing things, then, whatever its primary object may be, is, to some extent, a strengthening of volitional powers.

The testimony of men who have investigated the effect of muscular activity of the crews of Cambridge and Oxford

Universities, is that there has been an "increase of stamina, of energy, enterprise and executive powers, and of fortitude in endurance of trials, privations and disappointments." And these you will notice are all distinctly volitional gains.

You will note that of the illustrations used one is taken from the criminal class the other from the highly respected and educated class, thus representing the two extremes of society, both showing that regular and systematic use of voluntary muscles has an important and beneficial influence on the development of the brain, and hence on the mind of which the brain is the organ. The foundation of habit is laid in youth, yet one in adult life may change his manner of living to a considerable extent as the cases cited above show. Royce tells us: "The cortex remains, to a remarkably late period in life persistently sensitive to a great variety of new impressions, and capable of forming at least a certain number of specialized new habits—such as are involved whenever we learn to recognize a name, a new acquaintance, or carry out a new business enterprise." Just here is where the physician will often experience considerable difficulty with the adult patient. He prescribes something that is contrary to the old habits of the patient and he will say: "Oh, doctor! I can not do that." But by a careful study of the conditions involved and patience and perseverance on the part of the physician results will be obtained.

This objection on the part of the patient naturally suggests the question: What is the importance of the will, and its relation to action? We will not discuss the different theories. However the trend of psychological thought seems to be toward the voluntaryistic side.

Since it has been shown to be the most essential feature of consciousness, that all the individual elements and states are united through one synthetic activity, it may be said that to volitional activity is due the existence of consciousness itself.* * * * But even at the highest stages of mental development, a purpose, and a feeling aroused by this purpose, rules the course of thought. The more such a mental center of gravity (the real self) is wanting the more disconnected will consciousness become. * * * * Only through firm volition is actual *self-conciousness* possible. What is expressed in the unity and the continuity of memory, and in immediate feeling of self, is completed in the act of will, in which all elements of consciousness co-operate with concentrated force.—*Hoffding.* Psychology tends more and more to consider will as the primary and constitutive function of the mind.—*Paulsen.*. Every man stamps his own value on himself, and we are great or little according to our will.—*Smiles.* If you are to train the powers of perception *you must train the conduct of the person who is to learn how to perceive.—Royce.*

It may be said the will is that power of attention which gives self control and is absolutely vital. But people do not expect themselves to do things until they perceive the need of so doing them. We often forget that no one sees more than his activities have prepared him to see.

Both body and mind are organized for action and the natural terminus of every experience should result in action. Professor James tells us "the whole *neural organism* is, physiologically considered, but a machine for converting stimuli into reactions." The truth of the statement in the Bible that, "as a man thinketh in his heart, so is he," is becoming more apparent. Thought leads to action, action leads to physical, intellectural, moral and spiritual development. You may read about something or your friend may tell you just how a certain thing is done, but it is only when you have done it for yourself that you fully comprehend it, for then it has become a part of you. This emphasizes the fact that the real things of life are the concrete. Where a patient has difficulty in making things seem real, make use of the principles just stated.

This brings us to the consideration of the means used in dealing with mental lesions and as at present we are dealing with only mental, the answer to the question is suggestion. As the term suggestion is liable to be misunderstood, it

will be necessary to make a rather lengthy explanation of it. In using suggestion there is nothing abnormal, nor exceptional, nor anything that leads in any way from ordinary life. There is no human life into which suggestion does not enter in a multitude of forms. Using general terms, anything we see, hear, taste, feel or smell, is a suggestion. Family, business and professional life, education, politics, religion and art are carried by suggestion. If you take a retrospect of your life you will find that every serious act may be traced back ultimately to a suggestion. It may have come from a talk with a friend, or some lecture you heard, or some interesting book you read, or from some very deep personal experience. It cannot always be traced easily, but every effect has its cause, and in the last analysis will be found to be due to a suggestion.

Various aspects of life furnish examples of how suggestion works. Take, for instance, public opinion. Public opinion you say is the consensus of the opinion of a city, a nation or an age. But did you ever stop to consider who created it? It is created by the strong, vigorous, positive thinking of a few individuals who hold places of influence or leadership. But take something that comes in our line and about which there has been much discussion and differences of opinion. Heredity, the general consensus of opinion of modern scholarship, seems to be that tendency rather than the actual disease is transmitted. But how will you explain the appearance in generation after generation of certain diseases in the same family? It seems to be that under certain conditions such as a low state of vitality, or when in a mood of depression, one broods over the family taint until it becomes a suggestion strong enough to produce conditions that bring on the actual disease.

Patent medicine also furnishes another good illustration. No matter how foul or poisonous the ingredients, if it is only advertised enough it sells. Not because of the cures effected, but because it has been repeatedly brought to the attention of people until the suggestion has taken hold and lead them to have faith in its efficacy.

Superstition furnishes another good example of the power of suggestion. The new psychology furnishes a scientific explanation of many of the phenomena upon which it has flourished. However, it will hold its sway over people for years to come for there is no suggestion more powerful than that furnished by some superstition. It exists in some form in every land. Perhaps some of us have refused to begin a certain piece of work or undertake a journey on Friday. Think of the thousands of sick pilgrims, who make the journey to Lourds in France, or some other sacred shrine, and we are told on good authority that many are cured of their malady. What is the explanation? Suggestion. What difference does it make to the sufferer from disease whether it is a sacred shrine, some bones, a coat or relic, a metal ring or a placebo given by a regular physician that assists in effecting the cure as long as health is restored? All these things furnish the mental suggestion, which undoubtedly in many cases assists in effecting a cure. Professor Jastrow says: "The legitimate recognition of the importance of mental condition in health and disease is one of the results of the union of modern psychology and modern medicine."

Munsterberg in his "Psychotherapy," says:

> The aim of the last generation was to explain the world; the aim of the next generation will be to interpret the world; the one was seeking laws, the other will seek ideals. Psychotherapy stands in the service of both; it is the last word of the passing naturalistic movement and yet in another way it tries to be the first word of the coming idealistic movement; and because it is under the influence of both, it speaks sometimes the language of the one, and sometimes the language of the other. That brings about a confusion and a disorder which must be detrimental. To transform this vagueness into clear, distinct

relations is the immediate duty of science.* * * When science has thus mastered the whole physical universe, it finally brings over the mental life of man under the naturalistic point of view, treats his minor experience like any outer objects, tears them in pieces, analyzes them, and studies them as functions of the nervous system .A scientific psychology is thus reached which is the climax of realism, because it means that even the idea and emotions and volitions of man are treated as natural phenomena, that their causes are sought and that their effects are determined, that their laws are found out. To apply this realistic knowledge of the mind in the interest of therapy is merely to use it in the same way in which the engineer uses his knowledge of physics, when he wants to harness outer nature. As that is only possible when theoretical science has reached a certain height of development, it can indeed be said that practical psychotherapy on a scientific basis can be considered almost as the ultimate point of a realistic movement, it cannot set in until psychology has reached high development, and psychology cannot set in unless biology has preceded it.

A discussion of methods of suggestion will not be attempted, any more than to say that there is one called the general or indirect method which is unintentionally and unconsciously used; while the direct method consists in the frank intentional statement made to the patient. The manner in which it is made will depend upon the mental characteristics and condition of the patient, and care, tact, and judgment must be used or more harm than good may be done.

The material used in suggestion is either an action or belief in an idea. But the final result of belief is a future action. Thus ultimately every suggestion is a suggestion to activity. There is a definite purpose back of suggestion, and it stands for a clear, definite perception or thought of sufficient force to make a lasting impression on the inner self of the patient. The idea of itself, which is used in suggestion, is not different from other ideas, but it should be presented so that the way in which it takes possession of the mind reduces or presents the chances of the opposite idea from eating. Dubois tells us that the suggestible condition is a normal one and that a well person is more open to suggestion than one suffering from disease. Daily experience shows that all are at different times suggestible in different degrees. Suggestive power is possessed by different persons in different degrees and the readiness to accept suggestion varies greatly with different individuals. The emotions reenforce one's readiness to accept suggestion. Hope, fear, love, and jealously, when coupled with the idea, add greatly to its effectiveness. Fatigue and intoxicants increase the suggestibility of a patient. Dercum in Cohn's Physiologic Therapeutics says of Moral Suggestion:

Much unnecessary mystery attaches to the term. Unfortunately it has been associated very closely with hypnotism, and has acquired an almost specific meaning. To make a suggestion, however, does not mean to impose a hallucination or a delusion upon a person in the condition of hypnotic sleep, but merely to convey to or arouse in the mind of another, some thought or idea, in an unobtrusive manner. It is a process that is always taking place, usually unconsciously, among the various individuals of the social body, and is in itself the outcome of perfectly normal mental functions.

Physicians employ suggestion habitually though most frequently they do so unintentionally and unconsciously. That it often powerfully affects the progress of a case, for good or for ill, every experienced practitioner will admit. Mental factors influence more or less the physical condition of every patient, and this fact is true whether the patient be suffering from an acute or chronic, a general or a local, affection; from disease of the nervous system or of the other structures; from organic lesions or from purely functional disorder.

As to the mode of suggestion, he says:

It may expand itself upon the mind of the patient alone. Thus, it may affect the emotions and the general mental state of the patient; or it may affect one or more of the special functions of the nervous system. That the functions of the nervous system are greatly influenced by the mental condition is evidenced not only by numerous physiologic facts, but by a still greater number of clinical facts. That the mental state may be a predominating factor in an attack of vomiting, of diarrhea, of cardiac palpitation, in changes of the temperature of the extremities or even in such phenomena as the degree of the patellar reflex, is well known. The common functional nervous diseases, notably hysteria, furnish a still more remarkable series of facts.

Thoughts like muscles, one opposing the other, are given to man in pairs, and just as it is important for the welfare of the individual that a certain muscle or muscles control the action at a certain time it is just as true a certain thought should hold sway at a given time in order that normal mental conditions prevail. The body at a given time possesses a certain amount of nervous energy that is under the control of the mind. This is divided into two factions, which are opposed the one to the other. Under normal conditions these two factions work so that a normal mental condition is maintained. When the body is suffering from disease this mental equilibrium is often interfered with, and here it is the physician comes in to assist in restoring normal mental action. In a way the following will illustrate the above thought:

Did you ever become so interested in doing or reading something that you were unconscious of what was transpiring about you? In that case the stimuli coming to your brain from what was transpiring about you were of insufficient force to overcome that which you were using in the matter that was receiving all your attention. Here the nervous energy you were consuming represents the stronger faction or part and held the right of way.

I am very fond of works of art and used to dabble a little with brush and paints, I have found myself so absorbed in painting a picture that I failed to breath sufficiently deep to supply the demands of nature. But I did not realize it until a deep sigh aroused me to a consciousness of the fact. To me the explanation of this in part seems to be that I employ so much (one faction) of my nervous energy in painting so that there was not enough left to enable nature to do her work properly. The sigh was nature's way of forcibly supplying the deficiency and also of warning me. It also shows that concentration of thought will do and how even a function that is normally performed unconsciously may be influenced.

Hilger in his book "Hypnosis and Suggestion" deals with the thought suggested above, but in a somewhat different manner in discussing the way in which he treats hiccoughs.

> There are many such popular forms of curing hiccough; they all have this in common—that the patient's attention shall be distracted from the discomfort or diverted from it, either by a pure internal psychic activity, or with the assistance of external impressions. * * * * Thus we see how, by diverting the attention, it is possible to obtain cure of an irritated cerebral centre. If we wish to psychologically define the conception of the diversion, then we must say: We speak of diverting the attention if we direct it so strongly into one direction that it is withdrawn from another function of the central nervous system. The irritated centre becomes quiet and in the quiet it can recover itself. The beneficent effect of time, the *vis medicatrix naturae*— in other words the tendency of the organism to return to the normal—may be affected.

Many cases of constipation furnish a good illustration of the thought that the nervous energy is divided into two factions or parts, the one opposed to the other. It also shows how a mental lesion may be formed and how treated. Frequently constipation is caused by persons neglecting to attend to the call of nature at the time nature calls. They are engaged in doing something that requires an hour or more to finish and they think they must finish it. So a message is sent to the sphincter ani muscles to contract and to the colon to cease its peristaltic action. Thus bowel action is deferred and by the time the piece of work is finished nature has ceased to call for that day. The next day the same thing occurs again and on the following day nature calls in the afternoon instead of in the morning. If this is persisted in for any length of time the regular habit of nature will be destroyed and a very stubborn case of constipation has been developed. The rational treatment in a case of this kind would be to have the patient change the mental and dilatory

habits. The patient should be told that the calls of nature should not be neglected and at a certain fixed time each day, preferably in the morning, an effort must be made to evacuate the bowels whether there is a desire to do so or not. The patient should be instructed to concentrate the mind on the desired action and in that way assist and strengthen the weakened muscles.

Of course the physician will not say to the patient: now I am going to give you some suggestive treatment. But after what some might call the simple osteopathic treatment and instructions concerning diet have been given, instruction concerning the mental attitude in regard to the peculiar needs of the case should be given. The manner in which such instruction should be given will depend on the mental and other conditions of the patient. However, it should be given so as to appeal to the common sense and arouse hope and expectation in the patient. You ask, will not the simple osteopathic treatment alone bring results? Probably. But quicker and better results will be obtained when the mental side of the case receives its share of attention. Constipation may be due to other causes than the one given above, but whatever the cause the nerves and muscles of the bowels have not been allowed normal action and mental treatment can be given that will strengthen them and assist in bringing about normal action.

The aim of this lecture has been to bring your attention the following facts: That modern psychology is becoming scientific and practical, and that it is bringing to light many things that physicians should know and make use of; That physicians have not given mental therapeutics the attention the subject merits and this has worked to their detriment, but that now they are awakening to the fact and are just beginning to give the subject some consideration; And especially that there are *mental lesions* and that they must be treated as such, and that by so doing, one does not violate the osteopathic concept.

TECHNIQUE

VERTEBRAL AND RIB LESIONS

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I am more than pleased that our subject, which we will now consider, vertebral and rib lesions, is of daily interest to us all. This subject is really one of manipulative procedure. There are items of general consideration that must be well understood before the manipulator is able to act understandingly. I shall not take you through an anatomical and physiological review, but ask you to keep the following points in mind:

First—The shape, general direction and fitting together of the articular processes of the spine. From occiput to sacrum there is a gradual change in the direction of the plane of the articular facet. The superior facets of the axis look almost directly upward. As you pass down the spine, these facets drop more and more until in the dorsal region the articular surface looks almost directly backward. The inferior facet looks forward. They are thus fitted together like the tiles on a roof. The lumbar region presents a marked change. The direction is obliquely backward and inward to a sagittal plane. Strong flexion will lock this region.

Second—Movements of the spine. There are four as follows: Flexion—anterior bending; Extension—posterior bending; Rotation—turning on a vertical axis; and Side-Bending. This side-bending movement is somewhat of the nature of a hinge which allows body to bend downward and outward as if shoulder were to meet hip.

Third—Etiology of spinal lesions. They may be classified as follows: (a) Trauma; (b) Inflammations; (c) Contractions or Relaxations.

Demonstration before Sections in Technique at the Kirksville sessions of the A. O. A., August, 1913.

Fourth—Diagnosis of Lesions. To facilitate this procedure, have a skin pencil or crayon, a plumb line or tape line at hand. I shall call to your mind a lateral condition or one in which the vertebra is rotated on a vertical axis. A diagnosis is readily made unless age, adipose tissue or signs of a deflected spine exist. Remember this rule: that normal joints have more or less motion; test for motion; if immobile, a lesion is present instead of a deflected spine. Verify this conclusion by changed anatomical relation of spinous and transverse and rib position. A verified malposition calls for correction. Proceed with your work; (a) Attempt one correction at a time; (b) Secure rigidity of segment below lesion, and exert force, to attempt to produce movement on point immediately above fixed segment; (c) Exert pressure in same or parallel planes as to direction of normal movement; (d) Obtain assistance of patient and get relaxation of parts; (e) When necessary to apply sudden or strong force have the tissue taut before applying the force; (f) Strong dorsal extension makes rigid the dorsal areas and lessens rotation and side-bending; (g) Strong flexion of lumbar region fixes the lumbar area and lessens movement in this region: (b) Vertebral lesions may be maintained in malposition by overstretched and damaged articular ligaments. A combination of two spinal movements, rotation and side-bending produce a lateral lesion. Correction must be attempted and may be brought about by any force that will produce a rotation—side-bending movement.

I. UPPER DORSAL LESION

Right lateral; patient on table on left side; stand in front of patient at shoulder level; grasp spinal column with left hand, thumb above and to the right of luxated vertebra; grasp head, face and neck with right hand; the left side of neck and cheek resting on the hand. Now exert force to produce a rotation side-bending motion.

II. MID OR LOWER DORSAL AREA

Patient prone on table—right lesion—stand on right side of patient. Fix lesion area with left hand, grasp left shoulder and axillary region, rotate the spine by forcing the hands toward the sagittal plane.

III. MID OR LOWER DORSAL AREA

Patient on right side; operator at back of patient. Fix area with left thumb and hand, and steady area by elbow against operator's body or hip; rotate with right hand.

IV. SAME CONDITION

Patient on stool; take a half-Nelson on patient with one hand and arm, fix spine with the other hand and rotate. Remember that best results are obtained by moderate flexion position of spine. The proof of this assertion being found in the fact that strong spinal extension locks the dorsal area.

We will now consider an anterior lesion.

Movability of the joint will establish the fact of lesion as against a shortened spinous process. This lesion is really one of malposition due to overextension Correction lies in the removal of such overextension.

Movement (a) repeated flexion and extension. (b) Patient on stool with back to physician; physician sits on table, places his knees on transverse processes at lower part of affected area. Have patient clasp hands on back of his neck, reach under axilla, grasp wrist to apply the force or power. We really use a lever of the first class in which the shoulder girdle is the fulcrum and the knees make the weight. Put on the power with a moderate degree of flexion. Be careful about giving this movement as a powerful leverage is possible and might disturb patients.

It is scarcely worth the time to call your attention to posterior vertebral lesions. Such condition is really due to overflexion of the spinal column. Removal of lesion then is to overcome the undue flexion.

Movement (a) Repeated flexion and extension. Movement (b) Patient prone on the table; physician stands on stool and exerts direct pressure to affected area. This movement is more effective if flexion-extension is made by raising and lowering shoulders or legs at time pressure is exerted with other hand.

I desire now to call your attention to rib lesions. Rib lesions are considered by many of minor importance, vertebral of major importance. Forever get rid of such an idea, if you have it.

Remember that the gangliated cord is in intimate relation with the costo-vertebral articulation; the intercostal vessels and nerves are just as closely associated with the superior costo-transverse articulation. Hence, it is impossible for the head of the rib to show any luxation or sublaxation, twist or turn without some sort of pressure or irritation brought to bear on either or both the gangliated cord and the intercostal vessels and nerves—a disturbance of both sympathetic and cerebro-spinal systems. It is equally true that a disturbance of the dorsal vertebral relations will affect the ribs. Often a correction of a vertebral luxation will adjust the rib lesion as frequently, though are there independent rib lesions which need our closest attention. The ribs have two well defined normal movements. Make corrective movement to agree with normal motion.

The first movement is on an axis which passes through both costo-transverse and costo-vertebral articulations. This pushes the front of the rib forward and increases the antero-posterior diameter of the thorax. The movement is in the arc of a circle in a vertical plane.

The second movement is on an axis which is in a line drawn from costo-vertebral articulation to the sternum. This gives a hinge sort of a movement which raises the middle of the rib shaft, thereby increasing the transverse diameter of the thorax. Palpation is the sense par excellence that must be trained to detect the rib condition whether true or false, whether prominent angle, depressed head, superior or inferior border turned inward or outward. The direction of muscular planes will assist or detract form the efficiency of corrective measures. The scaleni in cervical, serrati in back, the prolongations of the erector spinae and the large quadratus lumborum may hold the ribs taut in malposition A mental picture of the lesion is formed. The position of hand or knee can then be certainly fixed with regard to lesion.

Movement (a)—A right side lesion, angle of rib prominent. Place patient on left side on table, physician stands behind; place right knee on prominent angle, grasp patient's right arm with your own left hand, place fingers of right hand on anterior extremity of rib affected. Pull upward and backward with left hand while exerting pressure with knee against the pull of the right hand. This gives a combination movement of both first and second normal rib actions and is very effective.

Movement (b)—A similar movement —patient on stool, physician sits on table, right side lesion, place knee on prominent angle grasp patient's right shoulder with right hand, reach over the patient's left shoulder and place left hand on anterior end of luxated rib; pull upward and backward and exert pressure on rib as before.

Movement (c)—Right side lesion. Place patient on high backed chair sitting on side with left arm over chair back; pad top of chair with a pillow. Get muscular pull by rotating and stretching upward and forward and inward of shoulder girdle, forcing the patient strongly against back of chair. Manipulate rib with other hand or hand and knee.

Movement (d)—This is for scaleni muscles. Patient on stool, physician to left facing patient, patient's head resting on physician's chest, pillow used as a pad. Use both hands to press downward firmly on insertion of scaleni. Hold them taut and rotate head with your arms.

Movement (e)—Patient on stool as before; grasp his head with left hand, rotate same while right hand exerts pressure on insertions of scaleni muscles.

Movement (f)—This for the quadratus lumborum and lower ribs. Right side lesion, patient on left side on table, physician facing patient, draw patient to a diagonal, head and shoulder off table on near side, legs off on far side. Hold the lower ribs while making strong left side-bending movement. Pad left ribs with a pillow to ease the pressure over table.

Such a study of lesions and manipulative procedures would not be complete without a word concerning the recurrence of corrected lesions. The old adage "An ounce of prevention is worth a pound of cure," is apropos here. The ounce of prevention is found in these three precautions:

Precaution 1.—Advise patient with regard to position and use of parts.

Precaution 2.—Retention of parts by binders or adhesive straps.

Precaution 3.—Physician's proper technique, which means care in giving movements to contiguous areas, discarding severe complicated movements and stopping when through.

A word to wise physicians is sufficient. Do not be over zealous to the detriment of your patient.

Shukert Bldg.

OSTEOPATHIC TECHNIQUE

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Bilaterally Anterior Occiput. *(The subluxation in which the Occuput is maintained upon the Atlas in a position of Hyper-extension.)*

The patient occupies a position similar to that assumed during reduction of bilaterally posterior occiput. The operator again stands at the head of the table and draws the patient's head toward him. Applying his hands against the side of the patient's head, he flexes the head upon the neck and the neck upon the body, at the same time bringing the patient's vertex against the operator's abdomen (the pillow may be placed between). This preliminary flexion is in itself corrective in a measure, for it substitutes, in so far as is possible without added effort, flexion for hyperextension. With the head and neck thus flexed, the operator brings the pressure of his abdomen in such a way as to direct his force in a line passing from the anterior fontanelle downward and backward to the base of the patient's neck. The operator's hands here fulfill a double function. They direct the head in the effort at reduction and they furthermore provide the greater amount of force necessary for reduction.

We consider in our discussion the left occipito-atlantal articulation. We sidebend the patient's head to the right and in so doing loosen the left articulation. We are aware of this loosening by the widening of the interspace between the tip of the mastoid and the extremity of the transverse process of the atlas, as this side-bending is maintained. We now bring against the patient's head pressure with the abdomen and hands, particularly the latter, in direction outward, backward and downward, to hyper-flex, as it were, occiput upon atlas. The movement is a continuous one. There are no stages of outward, downward and backward motion as we have described to make ourselves clear. The patient's face must always be maintained in the antero-posterior plane, in order that the force applied through hands and abdomen may be completely effective. The observations made, in the November Journal, regarding the change in size of the interspace between tip of mastoid and extremity of transverse process of atlas and concerning the changing relation of posterior border of transverse process of atlas behind and below the mastoid, also apply here. They are determined by palpation with index or middle finger. The findings, in the case

of the changing relation of atlas behind and below the mastoid, occur, however, in opposite order to that observed in reduction of bilaterally posterior occiput. The head of the patient is forced outward and downward in one continuous motion, finally to come to rest at the position it occupied at the beginning of effort at reduction. This adjustment is made several times, depending upon its effect upon the patient, first upon one side and then upon the other.

Inasmuch as this lesion is one of the rare ones, found perhaps only in children, we pass it by with this brief outline of our method of reduction. In a later paper on rotated occiput, which we believe exists in every patient, we will refer to this method of reduction for use upon the anterior side of the rotation. Bilaterally anterior occiputs are soon reduced by this corrective procedure, improvement in function of the articulation being evident immediately.

SIDE-BENT OCCIPUT. *(The subluxation in which the occiput is maintained upon the atlas in the position of side-bending.)*

The positions of patient and operator are similar to those assumed in reduction of the former lesion. The pillow is placed as before. We maintain the head against our abdomen with the occiput in its usual erect position upon the atlas. We assume that we are dealing with a left side-bending lesion of the occiput, one in which the left condyle has passed down and in on the left superior articular surface of the atlas and the right condyle up and outward on the right superior articular surface. We hold the head firmly against our abdomen with hands applied at its sides. We now point the patient's chin toward his left shoulder and prepare for the final effort at reduction by a few carefully given forward thrusts of the head in this direction. The sagittal suture is again considered as a plane bisecting the head and this imaginary plane is kept in the vertical position. We derive the force necessary for reduction by the same rotary movement of the body which we have emphasized in a former paper. Having prepared the patient for the final effort at reduction by the preliminary thrusts, we now put greater power of body into the final one and in so doing force the right condyle of the occiput down and in on the right superior articular surface of the atlas. The left condyle had been previously lifted away from the left articular surface of the atlas by the right side-bending of the head. It must naturally regain its former normal position when the head is finally erect at the end of adjustment, for when the right condyle moves down and in the left must be equally far displaced in the same direction in which the right passes; that is, it passes up and out to the left. The reduction occurs with a distinct grating sound but often requires more than one final forward thrust to completely correct the subluxation.

PROBABLE PATHOLOGY OF THE SPINAL LESION FROM A MECHANICAL VIEWPOINT

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(Continued from Page 314.)

Great stress has been laid on the probable reflexes initiated by the articular surfaces of joints when in a subluxated position. There is no doubt that these surfaces are richly supplied with sensory nerves, but the general rule regarding cartilage is that it is not so well supplied with nerves as are many other tissues. McConnell writes:

"It is the ligaments that maintain a lesion of the chronic type. The injury here is considerable; not necessarily in the sense of lacerations and general exudative sequalae. But the ligaments are strained and stretched, and more or less hyperplasia follows. Proliferative changes and thickening are observed. Arthritis involving the cartilages of the articular processes is not the rule. In most instances the cartilages are normal, as well as the intervertebral disc. But the ligaments of the former suffer more than those of the latter."

In regard to the above, I wish to advance the following propositions:

1. Bones are passive and are moved by muscular contraction, gravity, and trauma;

2. The ordinary subluxation is within the normal range of movement;

3. With normal cartilages, there is nothing about the articular surfaces to maintain a subuxation or prevent the bone from returning to its normal position of rest;

4. The normal capsular ligament can not move the joint, and is loose enough to allow for all normal movement.

From the above we must conclude that the forces which produce and maintain an acute subluxation are not attributes of the bone, articular surfaces or the ligaments. By far the commonest force to blame is muscular contraction. Even in those cases produced by slips and falls the most of the damage can be traced to the musuclar effort to regain equilibrium or avoid injury. No matter what the cause of the subluxation of a vertebra, there is no doubt that the deep spinal musculature on the side towards which the rotation has occurred is in a state of tonic contraction. This alone may have produced the lesion of the vertebra as a cutaneous or visceral reflex, and in the acute stage is reasonably the factor which maintains the malposition. In the chronic lesion, however, McConnell shows that after this musculature is divided the malposition is maintained by the ligaments. What has brought about the stretching and thickening that is noted in these ligaments?

We have only to remember the origin of the multifidus spinae to give us a probable solution. This muscle arises from the posterior surfaces of the transverse process, articular process and lamina. All of this territory is covered by the attachment of the muscle; the internal portion passing to the spinous process of the vertebra next above, and the external portion to the second above. The mass of muscle is closely attached to these surfaces and attaches to the articular ligaments the same as to the osseous structure. The tonic contraction of this muscle during the existence of the vertebral lesion must stretch and strain the articular ligament to which some of its fibers are attached, and this undue tension will result in the thickening and distortion which, in the chronic stage, is capable of maintaining the malposition of the vertebra after the muscles are removed.

The increase of connective tissue noticed in the muscle itself is the result of the abnormally sustained tension, and it is only reasonable to consider that the increase noticed in the ligament is a part of the same effort of nature to strengthen the tissue under strain. In the whipcord and fiddle-string contractures that are so noticeable in the muscular tissues of the chronic lesion there is an enormous increase of fibrous tissues around the muscle cells. It will be remembered that the force of the muscle's contraction is transmitted by a delicate arrangement of white fibers which internally seem to be incorporated with the sarcolemma or cell membrane of the muscle and externally attach to the points of origin and insertion. In the case of an extensive attachment, such as we find at the origin of the deep spinal muscles, these white fibers are anchored practically individually into the periosteum, ligaments and fascia from which the muscle takes its origin.

In normal movements the tension upon such a small portion of the area of origin as the capsular ligaments present would be of small moment, especially when we consider the variation of the tension and the frequent periods of relaxation during which the tissues would readjust themselves and recuperate. This small amount of tension, when maintained for such a period as we know the abnormal contractures of lesioned muscles to endure, would certainly produce stretching and straining of the capsular ligament and result in the thickening noted by McConnell. This stretching and thickening of the capsular ligament would also have an appreciable effect on the intervertebral

foramen, of which it forms part of the wall, and this effect would be progressive in character, bringing about a similarly progressive change in the foramen and the supports of the structures which pass through it.

Regarding the widely distributed and varied pathologic conditions, which may result from a typical osteopathic lesion, we have only to consider the probable number of nerve fibers in the plexus that covers each artery. Fibers, laying side by side at a certain point of the artery's course, may terminate at opposite limits of the field of distribution. Just which of the several fibers were affected by the lesion would determine the ultimate pathology in the vasomotors.

Consider the vertebral artery in its course from the subclavian, in relation with the scaleni; follow it through the foramina in the transverse processes of the upper six cervical vertebrae; note the manner in which any of the tissues in relation may disturb the supporting fibrous tissues. Theoretically such disturbance at any point of its course might produce vascular disturbance at any point within the distal field of distribution.

The internal carotid is another artery that could be very easily disturbed in like manner by upper cervical lesions or contractured muscles, not noticeably interfering with the lumen of the vessel but irritating or inhibiting one or more of the nonmedullated nerve fibers in the plexus surrounding it, and thus interfering with vascular integrity at some part of the distribution.

Along this line I believe may be found the logical explanation of many cases of insanity where we find, as is so often the case, the most pronounced lesioned area at or near the cervico-thoracic junction In maladjustment of the vertebrae and ribs in this locality, consider the sheets of fascia attaching to these structures, and how easily they might interfere with the large arteries which penetrate them, remembering that every artery is accompanied by its own particular plexus of vasomotor nerves.

There is a general agreement among physiologists that vasomotor nerves have not been demonstrated in the vessels of the brain. This simply means that such variations in the size of vessels that occur in other parts of the body have not been observed in the brain. This is, to me, one of the best proofs that there are vasomotors present and active. Histologically there is no difference between the structure of the vessels of the brain (excepting the sinuses) and similar vessels elsewhere in the body. In their walls is found smooth muscle, and where there is muscle there must be nerve to control it. That the vessels of the brain are maintained in such equable tonicity is the best evidence that they are under vasomotor control. It is noteworthy that in these portions of the body where the greatest variation in the volume of blood occurs, we find the anastamotic character of the vessels most marked. The anastamosis is doubtless a factor in the accommodation of the enormous increase of blood during dilation of the area. This feature is lacking in the internal circulation of brain tissue, which lack, together with the unyielding character of the bony envelope, is against any great variation of volume, but the tonicity of the vessels is maintained and that can be done only through the vasomotor nerve.

In bringing this paper to a close, I wish to express my appreciation of the research work done by Drs. Louisa Burns, McConnell, Deason and others, whose work cannot but be most helpful to all in our ranks who wish to progress My respect for the work they have done is shown by the use I have made of the facts they have demonstrated. That my deductions from these facts differ somewhat from theirs, simply means that different people look at things differently. It is by the interchange of ideas in a dispassionate manner that we may hope to find such truth as is within the scope of our understanding. In the finding, proving and *abiding by* such truth lies the future of osteopathy.

Oliver Bldg.

PARTIAL DEAFNESS

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There evidently exists some confusion as to the anatomy of the Eustachian tube, also of some definitions used so far in articles explanatory of my work on Catarrhal Deafness.

"Lumen is a transverse section of the clear space within a tube." An orifice is the entrance or outlet of any body cavity, any foramen, meatus, or opening. Authorative texts do not give the measurements of the Eustachian orifice, but they do give the measurements of the Eustachian lumen. "Cartilaginous part 5 millimeters, osseous part 4 millimeters." The cartilaginous portion of the Eustachian tube is about two-thirds of the total length of the tube, has a funnel shaped orifice opening into the nasopharynx. I find these orifices in dissections before me, and in others noted by me, to be nearly two-thirds of an inch in their perpendicular diameters and one-half of an inch in their horizontal diameter. I do not pose as an authority on anatomy. I am simply giving the measurements, which I found in actual dissections made by me.

It is well to recall that the cartilaginous portion of the Eustachian tube is partly cartilaginous and partly membranous, which latter forms the lesser half of the circumference, whereas the cartilaginous forms the boundary (part) of one side and the superior wall. The calibre of the cartilaginous portion is slightly sigmoid and cleft-like. The cartilaginous portion normally prevents occlusion of the lumen, i. e., maintains its patency, although the opposite surfaces of the lining membrane touch one another, excepting at a point very near the union of the cartilaginous and osseous portions, which is the isthmus of the Eustachian tube, and at the pharyngeal orifice of the Eustachian tube. Bearing in mind these anatomical relations, also when the nasopharynx is diseased (cartarrhal) the nasopharyngeal tissues are congested, often hypertrophied; in consequence of which the *cartilaginous portion is lengthened.* Now, I find it possible to insert the index finger from *one-fourth to one-half inch,* dilating the nasopharyngeal orifice, as well as the cartilaginous lumen of the Eustachian tube and by making traction from within outward, thus breaking up adhesions, correct the angle, and eliminate obstructions to normal drainage and air transmission. You may only insert the cushion of the index finger in the normal nasopharyngeal orifice of the Eustachian tube.

The function of the tensor palati—**levator paleti and salpingo-pharyngeus** is in part to open and close the pharyngeal orifice of the tube during the act of swallowing, which favors the transmission of air to the typanic cavity. Overgrowth of connective tissue adhesions disturb the functions of these muscles and eventually cause malalignment of the cartilaginous portion of the tube, a very common sequella of catarrhal deafness. These adhesions can be broken up, by inserting the index finger deeply into the mouth (palm upward) hooking the first phalanx over the soft palate and springing it downward and forward; before withdrawing the finger, also dilate the Eustachian orifice. This so far as I know, so far as my technique is concerned, is the only claim to originality I have ever made.

Some have questioned the possibility of examining and treating of Eustachian orifice and tube according to my technique, and yet they quote numerous authorities who have used the index finger to break up adhesions in the fossa of Rosemuller, forgetting, or ignorant of the fact that it is necessary to pass over and beyond the Eustachian orifice in order to reach the fossa of Rosemuller.

The fossae of Rosemuller are posterior to the orifices of the Eustachian tubes. Just why I should be assailed, as to the originality of certain methods given by

me, I yet fail to see. However, as regards the matter of priority, since I have made no especial claims, is not important. I can only reiterate, that so far as I now know, that part of my technique only is claimed by me as original, which relates to the direct digital treatment of the orifice and tube, and soft palate, to facilitate naso-pharyngeal drainage and modifies—normalizes—typanic impulses.

Dr. Herman F. Goetz, who is quoted in McConnell and Teall's work as recommending soft palate work, has told me, that his methods in no way resemble mine, and his statements are the only statements I have ever found, even referring to the soft palate. A careful search of authoritative texts has failed to show any data relative to a manual dilatation of the pharyngeal orifice or soft palate technique. During the past few years I have used the soft palate technique to relieve congestive headaches, aural and opthalmic disturbances with excellent results. Only recently I arrested a bad case of otorrhea in a child fourteen months old. The case was a bilateral suppuration of four weeks standing. The mother noticed that she could not attract the child as usual, and the examination tests showed evidences of partial deafness. The mother had previously visited some of the local regular practitioners with no results. I found the submaxillary tissues swollen and extremely tender, and the soft palate passively congested; springing the soft palate, with my little finger and gently relaxing the submaxillary and cervical areas arrested the otorrhea and cured the case in one treatment.

When the naso-pharyngeal technique is supported by a procto-gynecological adjustment, the inherent delicate sensibilities of the patients are eliminated by the use of rubber gloves. Out of the large number of cases which I have treated for partial deafness, I have only had two cases of submucous-emphysema which was developed by direct catheterization. Owing to the congested and depleted condition of the naso-pharyngeal tissues, the catheter entered the submucous tissue, and air was delivered into the superficial fascia, instead of into the Eustachian tube. The air is very readily absorbed by the fascias, and appropriate manipulations will eliminate the trouble in a few days. Dr. Deason recently demonstrated the fact that pneumonic emboli were not so bad after all, and their danger much overrated. With a complete atresia at the isthmus, and the catheter properly placed within the orifice, the air may be forced beneath the membranous lining and into the fascia. Catheterization should always be supported by the diagnostic tube, and if the operator fails to get a response from the external auditory meatus, he should not proceed any further with the politzerization.

It is very essential that the radical naso-pharyngeal treatment should be supported by mandibular submaxillary adjustments. Dr. Herman F. Goets, *Journal of Osteopathy*, October, 1902, calls attention to the fact, that "Malalignment of the inferior maxillary at its articulation with the temporal, the effect of which is to disturb the action of muscles superficial to the nerve and blood supply of the ear, producing a mechanical pressure, thereby causing secondary or reflex derangements in the structure of the middle ear, also causing direct pressure on the nerves of the parotoid gland; branches of the same nerve which supply this gland send twigs to the middle and inner ear."

When relaxing the submaxillary and adjusting the mandibular tissues, I always keep the watch upon the ear, in order to readily identify the exact area at which I can get a modification of impulses to the aural apparatus. One of the most prominent orthodontists recently stated to one of my patients, that he had noticed in his mechanical adjustments of the mandible to correct facial expression, his results were accompa-

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Editorials

A MEDICAL COLLEGE AT KIRKSVILLE?

The announcement is made in Kirksville that Drs. Charles E. Still, George A. Still, S. S. Still and Mr. E. C. Brott will open the Missouri Valley Medical College in the old Ward School property in that city, in which full credit will be given to graduates of osteopathic colleges for the work done in securing their D. O. degree. That is to say, those who studied two or three years and received their osteopathic degree may enter it and study two or one year more, respectively, and receive an M. D. degree.

There is nothing new in this except the location of the proposed school and the names mentioned as responsible for it. A year or more ago a college with just such objects and purposes was opened in Los Angeles. It is still in operation and we are not informed that its capacities for short circuiting the M. D. degree are over-taxed. On account of the discriminatory law in California requiring osteopathic physicians if licensed except as "healers" to take the regular medical examination, one or both of the schools there considered the pressure to qualify their graduates to meet this examination, but knowing the sentiment of the profession, they have taken no such step, and the JOURNAL is not aware that conditions in Missouri or elsewhere than in California give any excuse for considering such an institution within the profession.

The information we have is contained in an address to "The Student Body" by Dr. George Still printed in a school paper of March 4 and as it gives the objects and purposes of the proposed school, perhaps it is fair to quote liberally from this official statement, as limitations of space prevent our reproducing it in full. As set forth in this address, the movement starts on the defensive. He states that, "It is not intended to make drug doctors of osteopaths, but rather teach them the uncertainties and fallacies and unreliable effects of drugs." *Is not this a queer object for founding a medical college?* Is it a bona fide medical institution and will its degree, if issued with these avowed objects, meet with any recognition from state examining boards? Could not an osteopathic college with all propriety under a head of "comparative therapeutics" give such a course, and would not that be the honest and straightforward method for imparting this knowledge, the value or desirability of which we are not questioning? After mentioning how the faculty of the new school would strengthen that of the present school by the medical men. it would draw together, for "there will be no conflict between the two institutions," the address states, that "In addition to the extra medical and laboratory men, the promoters are in communication with

three of the strongest old-line osteopaths in the field, etc." Further, "The biggest feature from an osteopathic standpoint, however, is to be the establishment of a real osteopathic research laboratory." Still the question comes up, Why "promote" a medical college to operate an osteopathic research laboratory? One other point made by Dr. George Still is that the main difference between an osteopathic and a medical course is "the non-drug treatment against the drug treatment," and adds that the leaders in medical practice are discontinuing the use of drugs so rapidly that one would scarcely recognize the catalogue of one of the best medical colleges today when compared with that of the same institution of twenty years ago. If so, why should the osteopathic profession throw itself in the breech and try to restore its prestige by teaching it? And, if the manner of presenting the osteopathic education is so similar to that of presenting the medical education so that they can both be carried on together as far as they go, and if drug teaching constitutes so small a part of the medical curriculum, the question comes up, why the necessity of a medical college at all, to do what Dr. George Still proposes to do?

The only reason we can see is Dr. George Still's assumption that the medical education is more complete, that it includes more laboratory work and needs more clinical advantages (and in the letters he publishes received in response to an expression which he asked for, those favoring it do so believing that these clinical and laboratory advantages would be given them). Now, the question comes up, Why the necessity of "promoting" a medical college to do work that is as desirable for the D. O. as for the M. D.? If they have such facilities available, why not use them and why have they not used them in recent years, for it is safe to say that if these advantages which are now held out had been actually given in recent years, there would be no call anywhere for the medical cause? The fewest of "that considerable number" which Dr. George Still says has in recent years gone into medical colleges have gone for the degree (except where they felt it needed to do institutional work which they contemplated). They have gone because they felt they were short on these clinical and laboratory diagnostic advantages which the "promoters" now propose to give in the medical course. *The cure for osteopathic physicians seeking the M. D. degree is better work in the osteopathic schools, not another medical college.*

The Association has recognized the handicap of non-endowed colleges and has therefore not attempted to force the schools to advance their standards faster than they could do, consistent with their incomes; but if Kirksville offers so much better clinical advantages and if the admission is made that so much better laboratory facilities are available, why not give the osteopathic student the benefit of them? Why take the position that the present course is ample for the practice of osteopathy, but that another year or two with increased clinical advantages and laboratory methods for diagnosis, etc., is necessary to the medical degree?

Try as we will, we can come to no other conclusion in regard to the situation than that this is the position taken by the "promoters." Is Dr. George Still with his knowledge of the educational systems and the necessities for practice of both schools ready to make this admission and, if so, is the osteopathic profession ready for it to be made without a protest? We wish to state what we believe to be the logical effect of this move that if a so much more extended education is necessary or desirable to the practice of

medicine than to the practice of osteopathy, then the practice of medicine must be a much more important matter than the practice of osteopathy; the practice of osteopathy is merely a part of the practice of medicine which the M. D.'s in recent years have claimed; "it is good for some things," it is good when the M. D. recommends and supervises it and the M. D., having been prepared by this more extended course, is fitted for a much higher place in his community than the D. O. is, because the character and extent of the education is the main factor in determining the importance and value of the system, as well as the standing in the community to be secured by those practicing it.

Now the question is, how will the members of the osteopathic profession feel about this movement which discredits them and discounts every diploma which has been issued to them? It seems to the writer that there can be but two non-commercial objects for starting such a school. The one is to grant the M. D. degree. The other is to actually give an essentially different course from what can be consistently given in an osteopathic college.

The A. O. A. has never placed any ban on the desire to acquire knowledge for proper purposes. It has never discriminated against those who have gone through medical colleges and obtained this degree. Those who wish to be identified with the practice of osteopathy following this are accepted to membership on the same terms as those who have not received the medical degree. But it seems to the writer that there is a vast difference in the principle and effect of a very few osteopaths entering medical colleges and one of our own institutions considering only the convenience of these few, putting in a course of medicine leading up to the M. D. degree, when its effect on the whole is to discredit the work it has formerly done. It seems to be a case of taking the "one" on its shoulder and leaving the "ninety and nine" to shift for themselves.

The other object for founding such a college, as stated above, would be the actually giving of an honest, thorough, medical training. If any such object is in the minds of the "promoters," then Dr. George Still has very carefully concealed this fact in his address "to the Student Body."

In this we have discussed only the psychological effect of this movement of osteopaths to teach drug medication upon our profession as a disorganizing and demoralizing factor and of the very effective weapon it furnishes the medical people for discounting the osteopath in individual cases and osteopathy in general as system of therapeutics. It seems to us we should inquire into its effect upon our legislative status; does it not have a serious bearing upon legislation not only in the few states where we are not yet recognized, but in the many where osteopathy has after hard struggles won recognition as a distinct, separate system? If this move is made, can we successfully maintain that it is any longer such? Can we with straight faces ask the legislature to resist the demands of the medical organizations that we be considered a part of medical practice when these medical men can show the lawmakers, at least to their satisfaction, that at the fountain head it is treated not as the complete system it once was? Can we make an explanation that will get any consideration? Does not this action, if taken, jeopardize our standing in every one of these states and does it not rob osteopathy of every chance it has to make a clear statement and maintain a defendable position before the state legislature?

One other point: We all rejoice that only one out of fifty or more of the osteopathic physicians who have taken work in the better class of medical colleges, as ascertained and reported by Dr. George Still, had lost any of his confidence in the efficacy of osteopathy. That is such a satisfactory record had we not better let it remain as it is? Has it occurred to the "promoters" that the same results might not be obtained under the "friendly" surroundings they are preparing? Is there not a fundamental trait of human nature involved here? Let us state it as we see it: A man or woman after studying and practicing osteopathy enters a medical college; he knows he is in the camp of the enemy, and it puts him on his guard; he expects to hear drug medication presented at its best; if he is in Harvard, Johns Hopkins, P. & S. or Rush, he knows he is getting the best they have to offer and it is disappointing, and while he may appreciate their learning and culture along certain lines, the clear cut principle and practice of osteopathy shines out stronger by comparison, and through his disappointment that the best is no stronger, he is firmer in his original position. But under these "friendly" conditions there is not the warning that he is in the enemy's country to keep him on his guard; he is getting this from at least some of those who are giving him the osteopathic subjects; he knows he is not getting medical teaching from those who are most loyal to it or they would not be there, but from those who are teaching its "fallacies"; will this satisfy him that what he sees and hears is all there is in drug medication? If so, it may work well. Not being convinced of this, the natural tendency for him will be to experiment and try it out for himself when he gets into practice, for "A little knowledge is a dangerous thing." The difference seems to us altogether plain.

Had we not better let the splendid record of only one or two per cent. of contamination of those who go through medical colleges after having practiced osteopathy stand? Are we justified in disturbing a condition that is working so well? Had we not better continue to teach osteopathy only, but teach it well and let the very small fraction who demand a knowledge of drugs or a medical degree go and get it in the regular way?

We have no wish here to press but one or two important bearings which this proposed movement has upon the present and future of osteopathy. As far as the average practician is concerned, the question is, "Does this movement discredit him?" To answer it, how long do the "promoters" of the proposed college believe it will be before the A. M. A. begins to advertise this fact and pass the word on to every M. D. in the land, that the osteopaths have foresaken osteopathy, have taken up medicine and admitted, what the M. D.'s have for years claimed, that osteopathy was an incomplete system? And how long will it be before every one of these near 150,000 will be telling it to every person with whom he comes in contact? and have these "promoters" of the new college considered how excellent a basis for a plausible story they are furnishing those who were almost ready to acknowledge that the osteopaths have the courage of sincerity? Here in the cradle of osteopthy, inseparably linked with its origin and development, here the names associated with its inception, pointed to, wherever it is known, as its seers and mouthpieces, "promoting" a medical college in which the students of osteopathy will complete their work (for Dr. George Still says, the medical college will not give the first two years, these being given in the osteopathic college) and would that not be accepted the country-over as the limit of

the osteopathic facility, needs or requirement, and that they then give as much more in a medical college to make a "real physician." Have the "promoters" thought of these bearings, have they considered the feeling the profession when it has become aroused, as it will become aroused when it understands the full meaning of this move?

We earnestly hope that the movement is not really decided on, that the Rubicon is not actually crossed, and that before it is too late, they will thoroughly canvass the situation and sound the profession. They appear to be not familiar with the situation as the members in the field are familiar with it nor acquainted with the temper of the profession on this delicate subject. If the profession feels as the Journal believes it feels, before it is too late, we hope that every one who takes this view of the situation will express his opinion to the "promoters" in order that they may not be in the dark regarding the moral and financial support that will be withdrawn, if the school should become so utterly out of harmony with the profession.

Then, there is the student body in this and in other of our colleges and the vast number who are contemplating becoming students. Are they not entitled to some consideration? Should not the profession express itself and send to them a message of assurance? The osteopathic profession is bigger than any part of it and the osteopathic profession stands firmly for osteopathy. It is the one bright jewel that shines through the mist of doubt and uncertainty in the whole range of therapeutics. Druggers there are on the one side almost without number, eager to see us advance toward them; and on the other an ever increasing horde of drugless healers, ready to claim to be "the only" if we weaken. The one tower of strength in the field of medicine is the principle of osteopathy and the men and the women who have applied it successfully through these years are not going to desert it or stand for its being deserted! That is the message to the real students of osteopathy, and to those who in seriousness contemplate its study.

How we could welcome the announcement if this new blood, "these men of international reputation," all this laboratory work and increased clinical advantages were to be put into the old osteopathic college until now inseparably connected with the teaching and practice of osteopathy, and in fact almost a synonym for the same; how the osteopathic education would be uplifted and the osteopathic profession dignified and honored, its parent college the peer of the best devoted to the study and cure of disease! How we should like to aid it and do our utmost to bring to it the support of the profession, which would surely be forthcoming! And the question this raises finds no satisfactory answer: "If this splendid equipment and facilities are possible in one end of the town for a new medical college, why is it not possible in the other end of the town for the old osteopathic school so revered by the profession?"

BEFORE THE LESION—WHAT?

The Journal has printed in recent issues several interesting and valuable articles on the probable manner in which the osteopathic lesion, vertebra or rib, operates to bring about morbid conditions. Studies into the minute nerve connections are establishing pathways over which the disturbance may travel; experimentation suggests the manner in which the effects of the disturbance to the system is accomplished, and dissection of lesions artificially produced, since McConnell did his work ten years ago, has demonstrated the pathology result-

ing from the lesion. A study into the cause or causes of these lesions would be interesting and profitable.

In this study let us have the evolution of the practice of osteopathy before us. Dr. Still found these lesions associated with disease conditions and believed them to be the cause and proceeded to remove them as the cure; with what result we very well know. His followers continued his methods, and in proportion to their skill and faithfulness have secured the same results. Enthusiastic over the introduction of this entirely new element into the study of disease, and stimulated by the success obtained in its application, which no other school could approach, it is natural perhaps that this lesion should be emphasized and all other causes too largely overlooked. This neglect is now being cared for by broader experience and more thorough training. In this connection we wish to make it plain that the profession as a whole is in no sense weakening in its conviction that the osteopathic lesion is the chief consideration in the average case. The profession has simply grown big enough to recognize that other conditions may be contributory to the disease and hence should be considered in effecting a cure. The existence of and the effect upon the organism of the osteopathic lesion is the distinctive feature that we have contributed as the cause of disease, but this fact should not make us ignore all other causes, and because the removal of this lesion is the characteristic feature of our treatment—is that feature which no other school of practicians is capable of applying—need not cause us to ignore nor neglect common sense, natural aids for the reason that other schools of practice use them. We must seek out and make use of truth and that which is effective, not merely that which is new and different; but we should look upon these as simply aids to, and in no sense substitutes for, characteristic osteopathic measures.

It may be entirely natural that we have been slow in inquiring into the cause of the lesion. Our motto is "inquire into the *cause of disease*," and being satisfied that we have gone further in that particular than any others have done, we have not given a great deal of consideration to the cause of the cause. May be it is equally natural that we should accept the conditions of the body as we find them. Looking at it as a condition and not as a theory with which we are to deal, we deal with it as it is, and shunt off the query "How did it become so?" Yet, this question will not down. It is being asked constantly by the patient: "How did that lesion occur?" And often, "Why does it return?" We are apt to say, "a slip or strain, or maybe atmospheric changes, colds, etc." Many times the patient recalls a fall or injury, many times he does not, and is not satisfied with the explanation that a so serious condition could come about suddenly without his knowledge of it. Neither the recollection of some injury by the patient nor his inability to recollect the circumstance proves nor disproves that this is the explanation of the lesion.

In looking for the lesion we have been disinclined to consider what this individual has gone through in his own development from childhood or how he as a part of the race has adjusted himself to his present mental and physical environment from the stage from which evolution has lifted him. A plausible explanation of the lesion in the light of all contributory conditions is not only a matter of interest to the physician and satisfaction to patient, but a correct understanding of it is most desirable in order that intelligent effort may be made at its removal. If the cause of lesion be

traumatic, for instance, it is safe to say that "fixing it and letting it alone" is the logical, and perhaps the only treatment. If, however, we ascertain that the lesion is the result of some other condition which antedated it and was responsible for it, then although this lesion, no less on that account, acts as a cause of ill-health and therefore should be removed, at the same time it is highly important that we consider and if possible remove the cause which is back of it.

Are there such causes, and if so—what? We have considered for several months the desirability of opening up this question to discussion and in this issue of the JOURNAL under "Technique." Dr. McConnell has a splendid article discussing the etiology of the osteopathic lesion. Perhaps little can be added to what he says, but by way of emphasis we suggest a few thoughts that have occurred to us in recent years.

In the first place, let us consider the several regions of the spine with reference to their liability to lesion and the probable causes of the same. It would seem that the cervical articulations are very liable to lesion from traumatic causes and it is entirely probable, as we see it, that most of the single lesions in this region are the result of such causes, where not the result of lesions below. If we consider the weight of the head which the neck sustains, its mobility and the comparative rigidity of the area below it, the small cervical bones, and very much weaker muscular and ligamentous structures than the solid thoracic spine upon which it rests, the constant use it is put to in moving the head for seeing, listening and balancing the body, we conclude that lesions in this region may naturally be of traumatic origin. As to other causes for lesion we are not so apt to have here the changes reflected from inflammatory conditions in the structures to which the visceral branches of these nerves distribute as we find in regions below it, except that the weak joint so frequently the seat of lesion at the third-fourth maybe frequently lesioned as a result of the activity of the centres located there.

When we come to the thoracic region, however, we find altogether different conditions. We find the vertebrae articulated for the minimum of movement and reinforced by the cage of ribs, the whole arrangement looking to protection of the vital organs contained rather than for any considerable degree of movement as compared with the region above and that below it. We have here also the region in which the largest number of reflexes take place. That is to say, those which would produce reflex inflammation from the organs of the lower respiratory and the entire alimentary tract, together with some of the important reflexes from the pelvic organs. That inflammatory changes do take place in the ligaments and muscles about the spinal and rib articulations as the result of inflammatory conditions in the viscera with which these segments are connected nervously is not to be doubted.

In the lumbar region we are again in the field where strain, or trauma of some form, is very common and perhaps the vast majority of sacro-iliac lesions is due to traumatic causes. In addition to this is the field of acute infections to the cord and its membranes chiefly in the dorsal and lumbar regions. While infections to the cord and meninges may have occurred or, at least, been predisposed, by reason of these lesions, the inflammation results in spinal and rib lesion and deformities, notably anterior polio-myslitis.

The question often comes up, "Why does man's structure get out of fix so often and so easily?" This question deserves careful consideration because it

opens up the field of prevention of disease. If these lesions all happen as a result of slip or strain in the natural run of one's play or employment, no wonder people doubt their existence. If they come about as the result of wrong living, faulty posture, etc., according to our opinion, their existence is not only more plausible, but the subject also calls for serious consideration. No osteopathic physician who has watched children carefully through fifteen or twenty years into adult life, can fail to observe that at times he finds lesions and changes taking place in them as children or young adults which he cannot account for as a result of trauma. In not a few of these cases one important condition strikes our attention, the failure of the innominates with the sacrum to rotate anteriorly as they should when the child begins to carry his weight upon his feet and gain his proper poise. As we see it, this is the one important feature in developing a spine of normal contour, upon which depends the ability to stand and walk properly and keep the weight within the proper gravity line. If this takes place and the child learns to walk and carry itself properly, with reasonably well adapted seats at home and in school and with the proper bed, the child's muscles will develop in such a manner as to bring the least possible tension on any one point and thereby eliminate one of the most common causes of lesions.

It may be that man's spine is his weakest point; that the upright position of spine has grown from the horizontal and that consequently it has not yet reached the strength adequate to the stress and strain of its new position. It is possible that the arrangement and attachment of his viscera have not yet adapted themselves to the changed cavities and positions they now occupy. We are not discussing evolution. We are simply calling up here with the hope that it may be considered in the treatment of every case all probable bearings of habit, heredity and environment which may enter into the new picture each case presents. Maybe it is true that man's nervous system has not yet become adapted to the stress and strain put upon it by modern life, particularly by city life. We of today require glasses because the forefathers in the forests did not put the eye to the accurate and constant strain our manner of life requires, hence the eye of many of us is not developed structurally, and may be in a few generations the eye will develop to meet the accurate use required of it. Men of our day, although after considerable practice in racing automobiles, often "lose their heads." The steering gear—in their brains—goes wrong. They are not able to think and act with sufficient quickness. Dozens of lives have been lost in the navigation of the air when maybe the mechanism of the machine was not so much at fault as that of the operator, "who lost his nerve," and for the moment was not master of the situation. We have not developed to the point where such speed is natural for us. Maybe our children a few generations hence will develop nervous systems which will render great speed on earth or in air free from danger, but it is not for us—we are pioneers in speeding.

This is mentioned as an extreme example of the need of adaptation. We are not yet developed to perform the amount of labor and go at the pace we set ourselves and the re-action from all of this disharmony must fall upon the physical, because the physical is the lower grade structure, and being physical it must fight gravity, and resist dissolution and decay; and when robbed of nutrition and placed at a disadvantage by

the use and abuse of the nervous system, it suffers defects, lesions.

In addition to some of the possible causes of lesion to structure mentioned herein, we refer the reader to the article by Dr. McConnell, above referred to. However, it is not so much our object to enumerate the causes that may be back of the lesion, as to emphasize the fact that no doubt other causes for the lesion in addition to traumatic causes exist, and if so that recognition of them is a necessary part of the effective and intelligent treatment. The principle of the osteopathic lesion forms the basis for a scientific system of therapeutics. The practice of osteopathy is scientific because it seeks out a rational cause and proposes to apply a rational remedy. If we coordinate all the facts and forces its claim to being scientific cannot be questioned. In no sense do we minimize the importance or effect of the osteopathic lesion; holding to that as the greatest single contribution to an understanding of disease, we only want to go a step further and, if a primal causative factor exists or if contributary causes are present, give them due consideration.

Let us consider, as an example of the latter, the treatment of constipation. We are told that often it is due to the action of the will power upon the voluntary muscles involved in defecation. The will says "no" time and again to inclination and finally the tract connecting the brain centres and the voluntary muscles involved becomes interrupted and the response is not made when the will later tries to assert itself. There may exist lesions affecting bowel movement which had not been sufficient to block bowel action before the habit tract had lost control. The joint effect of these two prevents action, and when the case comes for treatment, we remove or attempt to remove these physical lesions and perhaps effect a cure; but we have not brought about a complete and normal cure until we have made the effort to re-establish the control of the will, and the condition will more readily recur unless that connection is re-established. We have restored to health just one of its legs.

Fortunately, in most of us compensation of organ for organ, or center for center, seems possible and nature is that virile and strong as to be able to overcome one or more interruptions in the pathway of its normal functioning provided the other connections remain intact. This means that when ill health or sickness occurs usually two or more causes are operating. Hence, in treatment and cure, one or more of these may be removed and the return of functioning may *apparently* be established, but a natural and complete cure should contemplate the discovery and removal of all of these interferences.

This is true in the run of cases as we see them. In a case of gastritis, we find a lesion, and maybe there has been abuse of function. The lesion is removed and for a time, at least, the function of the organ involved returns, but unless we have corrected the diet, the condition is liable to return and our cure has not been complete. Maybe instead of dietetic errors, the contributory cause has been worry, or failure to adjust one's self to one's business or domestic affairs. Correction of the lesion, as in the previous case, may cure the case—for a while—but if in addition to correcting the physical interference we have been able to teach the patient not to rob his alimentary tract of the energy necessary for the digestion of his food, the condition is not likely to recur.

Now-a-days people are apt to think that heredity contributes very largely to their ills, (papers and magazines are so

filled with the ravages of disease) and consequently one having come into a condition more or less similar to that which carried off several members of the family, the belief is that he or she cannot be cured. No doubt a lesion is found which predisposes to the trouble. We correct it and if we can at the same time disabuse the patient's mind of his belief that he must have every disease or any disease which has existed in his family, we shall go a long way toward making our cure permanent and complete.

Again, consider that frequent lesion in the mid-dorsal which is responsible for so much ill health and faulty development and constitutional disease; suppose we correct it, but suppose it was not the primary lesion. Suppose the habit of the individual, suppose his school seat or his bed is not adjusted to him; how long is the lesion, if we correct it, going to remain corrected, if it is a compensatory or developmental lesion and we give no attention to these causative factors? Suppose as a result of non-adjustment to present environment, or suppose the innominates and sacrum, the foundation of the spine, fail to assume the proper position and as a result the contour and curves of spine fail to adjust for weight-bearing and lesions occur, how are we going to treat these lesions?

Now what does this discussion lead to and what is the practical value to be gained from it? Simply this: That man is a complex organism of which the physical side alone is the most intricate of which we have knowledge, and that this is operated and operated upon by a nervous system, the nature and functioning of which the human mind has not yet begun to understand or explain, and all of which is presided over by a "mind," a higher self, occupying this physical structure as a temple; and although itself extremely sensitive to outside influences and impressions, yet it controls the body, bringing it erect, defying nature and gravity, giving it a countenance aglow like the morning, and an elastic step, when buoyed up by success and achievement; or the body and countenance and step, may be barely recognizable as the same under the influence of defeat and despair. Do we appreciate the full task that as physicians we assume This is an appeal to recognize the high possibilities of our calling.

The difficulty of the task and the magnitude of the work to be done stimulate real men and women to their best effort, and so an appreciation of the make-up and the value of this being we call man should stimulate us to the best of which we are capable. Let us think of man, then, when he presents himself, as being a mechanism, (and this view has been a distinctive contribution to an understanding of his nanture) but let us go further and realize the forces which play upon the organism.

So far as the osteopathic lesion is concerned, those of us who have had most experience believe most in the ill effects upon health which it produces, and the more wide our experience the more we see the practical proof that its removal is the most valuable contribution to the treatment of disease. As indicated earlier in this article, possibly all single lesions in certain parts of the spine are explained as being of traumatic origin; but in many others if trauma has entered at all, it seems to have played a part inferior to other causes, and it is against assigning a "stock" cause that we are arguing. Routinism is the deadliest foe of advancement. We must look upon each case as a different case, and search out its causes and direct its treatment. True, experience is worth a great deal, but we must not allow our experience to make us careless and treat generalities and not specific conditions.

If we consider all of these suggestions that we have hinted at and many others which may suggest themselves to the reader as being entitled to consideration in every case, how much broader our field of work becomes, how much more difficult, and on how much higher plane! No one familar with this view of osteopathy and its application would dare call it a one-idea treatment or a movement cure. Fortunately, a great many of us are getting this vision and considering these conditions in every case and every treatment given, however, some of us do not consider these contributory conditions, but simply take what we find and ask few questions.

By way of summary, to get this view makes us in the highest sense, physician and doctor. Physician, a student of nature and of nature's forces in the understanding of disease and in the re-establishment of health; and of doctor in the sense of being trainer and teacher, which opens up the wide, and until recently neglected, field of prevention of disease. If the lesion is traumatic, correct it and perhaps warn the individual as to how it came about in order that the pri- against its return. This may constitute the treatment. If the lesion is developmental or postural, or, at least, partly reflex from abuse of functions, then it is important that not only the lesion be removed, but that we understand how it came about about in order that the primary and contributory causes may be removed. The preservation and enjoyment of health may depend on the manner of life and attitudes of body toward its base and gravity lines and the adjustment of the mental to the environment.

A dozen years ago we should have hesitated to have pressed this larger view. There was danger of losing our bearings and floundering. Today we believe the osteopathic profession is big enough to hold firmly to the truth delivered to it, but to follow and develop that truth without holding it less dear or keeping it less clearly in view. There are faithful followers of truth in several schools of practice and some day truth is going to lead her children closer together. The faithfulness and zeal with which we develop ours will determine how near the others will approach us.

A CONTRIBUTION ALL CAN MAKE

The above discussion brings us to the entrance of a fruitful, though neglected, field, an understanding of the patient's earlier life, heredity and environment. If we are to view him in the light of the picture we have tried above to draw of man, we see the immense advantage which the old family physician had over the present day specialist. The trouble was the family physician, though rich in experience and close to his patient, was weak in bacteriology and pathology, and when the so-called highly educated got into control, his time had come.

We need not moralize, however, about conditions which we cannot control, but we can learn our lesson from them and that lesson is, whether in the office or at the bed-side, secure all possible data that may have a bearing upon the case. And practically everything which concerns the sick person has a bearing on the case and the wise physician will remove what he can and help the sufferer to adjust himself to what cannot be removed.

If we really have in mind to be of the highest service, we should know the details of the family and personal history. We should know the environment under which the sufferer has grown up, what is his work and what tendencies and habits he has inherited. With this as a

back-ground and the physical condition as we see it the fore-ground, we have a picture from which we can intelligently work. People are slow to speak of their heaviest burdens and these if unremoved or unadjusted to their carrying capacity, will mightily militate against all treatment. The body is physical. We are called upon to treat the body. Our treatment is directed to the physical, but as we have said above, the influences that react upon the physical will undo our work or render it more difficult to be done, if some attention is not given to these as well.

We should by all means form the habit of securing the fullest case history and of keeping an accurate record of each case and preferably of each treatment given. It is strange that when all who keep case records are enthusiastic over them and those who keep them the fullest are the most enthusiastic, that as a profession we have neglected this important feature. The causes of this perhaps for the most part lie in lack of training for this particular kind of work. And may be adequate forms have not been prepared or have not been properly brought to the attention of the individuals in the profession. Let us hope that the various lines of activity directed toward this feature may be successful and particularly would we urge a more thorough study into the surroundings of each case.

THE PHILADELPHIA MEETING

After a thorough canvass and due consideration of all circumstances bearing upon it, the Board of Trustees selected the first week of August as the date for holding its next annual meeting. A few members expressed a preference for the June date, a few for the late August date, but the great majority expressed the belief that early August would give us the best attendance, and of course the attendance should be the paramount consideration.

As announced in the recent issue of JOURNAL, the Hotel Bellevue-Stratford offers splendid opportunities for holding such a meeting as the Trustees and the Program Committee believe will be most appreciated by the membership. A splendid hall will be ample for the morning sessions and the program, which will be printed in an early issue, contemplates three or four addresses with discussions by the leading members of the profession.

The afternoon sessions will be given over to section work. Drs. McConnell and McDougall are in charge of the Technique Department and the arrangements of the hotel will permit of half a dozen or more of these section demonstrations being carried on at the same time and the arrangement will be somewhat similar to that which was so much appreciated at the Kirksville meeting. Amphitheatres in the city will provide for the sections in orthopedic work and those among us who have given especial attention to this branch will be in charge of the several divisions. The eye, ear, nose and throat section will also hold one or more sessions and surgical clinics will be held, if proper hospital facilities and arrangements for the after-care of the patients can be secured.

The main features of the evening sessions contemplate open parliaments and round table discussions in which the three divisions of Acute Practice, Pediatrics, Gynecology and Obstetrics will be given place.

This arrangement and division of the matter seems to offer the best meeting we have ever presented to the profession. Since the last meeting this has constantly been the aim of those having the matter in charge, that the association should on its first meeting to the East hold its

best meeting and the best which it is capable of producing.

One other feature of the meeting which promises to be markedly successful is the Concessions Department. Dr. Norman D. Mattison of New York has consented to take charge of this department and has already made excellent headway. The exhibit rooms are on the main floor, easy of access, in fact difficult of escape, to those who attend the meeting. Dr. Mattison proposes that in this department the growth, development as well as the recognition of osteopathy by the world of affairs shall be demonstrated as never before. To this end he invites any member of the profession to give the name and address of any concern whose products are of interest to the osteopathic profession if they have not been advertisers or exhibitors at our previous meetings. Dr. Mattison is giving his unusual ability and untiring effort to this work and the profession should support him in it. In the success of this undertaking we should all take peculiar pride.

Dr. O. J. Snyder, as chairman of the Transportation Committee, will soon designate aids or sub-chairmen in each of the several states to arrange the transportation facilities and keep the meeting prominently before the attention of the profession in the several states. From practically all parts of the country, good summer excursion rates can be had to Atlantic City with stop-over privileges in Philadelphia and, unless we are able to name special rates on account of this meeting, this is the plan that will be followed; but this insures us of very much better rates than we have been able to secure in several years.

Every one upon whom any feature of this meeting is depending is doing his utmost and will continue to do his best until the meeting has adjourned. This meeting offers the osteopathic profession an unusual opportunity as it brings it into a populous section of the country where one of its meetings has never before been held, and this location brings it into the very home of old school medical practice and prestige. If the average member does his duty by attending, the meeting will be an unqualified success.

POST GRADUATE SUMMER COURSE

The A. T. Still Research Institute is planning to offer a month's post graduate course this summer, probably immediately following the National Convention. The course will be practical and framed to give the practician the most in the least time. An outline of the same will be given in the April issue of the JOURNAL.

CARL P. MCCONNELL, D. O.,
Dean Postgraduate Depart.

CATARRHAL DEAFNESS

(Continued from page 378).

nied by considerable improvement in the aural apparatus in patients who suffered partial deafness. Dr. Harry M. Goehring called my attention to the fact that in almost every case of partial deafness, there was on "under bite," as he termed it, due to a lack of muscular balance in the mandibular-submaxillary floor.

Dr. Louis Robinson, the British anatomist, stated that he had found in deaf mutes an absence of the genio-glossus muscles and tubercles; these muscles are only crudely developed in such human races as the bushman, the pygmus and other primitive people in whom speech is very simple and consists largely of gutteral sounds. This muscle acts with lightning rapidity. If we study the motion of the tongue while talking at the rate of 150 words a minute, we find that there must be at least 500 different movements or adjustments. This gives eight or nine movements to every second; such movements are not synchronous but are continually varying their order. Is it

strange that co-ordination sometimes breaks down with a stutter or a stammer as a result? The action of the tongue in articulating words is due to the instantaneous shortening or lengthening of one or other of the fibres of the genioglossus muscle.

I have found that in patients who suffered partial deafness accompanied by a marked impediment in their speech, the adjustment of the tempero-mandibular-submaxillary tissues accompanied by manual traction upon the tongue and instructing the patient to practice speaking with expiration instead of inspiration, the difficulty could be overcome in a very short time. I tell the patient to *inhale deeply* before attempting to articulate and to inhale strongly through the nares with mouth closed and their speech will be delivered with greater volume and ease. With a piece of gauze, I catch the tongue between my thumb and index finger and use traction; this will develop the intrinsic muscles and assist the innervation to the oral cavity. I have had good results with this technique, and especially by giving the patient certain exercises in pronunciation, to be practiced during intervals between treatments.

Century Bldg.

Departments

TECHNIQUE

Carl P. McConnell, D. O., Chicago

It would be as manifestly unscientific to base all etiology upon the osteopathic lesion as it would be to base all technique upon the bony lesion. Although we thoroughly believe that osteopathic etiology in its widest application constitutes the most important part of etiology, as the bony lesion constitutes the basic portion in an anatomic sense of the osteopathic lesion field, still there is an essential part of the field of etiology outside of the strictly osteopathic. The physics and chemistry of the one apply to a certain realm of causes only. This does not invalidate the reality of, nor is it foreign to, the remaining field of etiology. Causative factors, anything that may disturb the integrity of bodily functioning, includes an extensive range of forces. Naturally technique will be applicable or modified in proportion and extent as the causative forces disturb the mechanics of the organism. To apply a set rule to all osteopathic lesions would be as unscientific as to apply a strictly osteopathic technique to every possible morbid manifestation. Of course, no osteopathic disciple has ever claimed that the beginning and end of scientific treatment has invariably rested upon finding an osteopathic lesion in every possible disorder and correcting it. The really difficult part of technique is the diagnostic part; that is, discovering all possible etiologic factors, balancing and weighing their relative merits, and then applying a rounded-out and proportioned treatment.

There are two interpretations to the term osteopathic etiology: first, when we refer to osteopathy as a school of the healing art, osteopathic etiology is inclusive of all possible causes that may result in ill-health; secondly, osteopathic etiology may refer to those causes that result in an osteopathic lesion, per se, any structural disturbance that requires mechanical adjustment to set aright. No doubt there are very few disorders of any kind that do not present some form of the characteristic osteopathic lesion, either primary, compensatory, or secondary from reflex sources. This is necessarily so since the bodily mechanism is physical and the principles of physics comprise an essential part of physiology. But the essential and practical point in technique is we must discriminate. Our diagnosis must be liberal and our technique modified acordingly.

Herein arises an important quality of technique, the knack or skill of doing the work. Aside from a certain expertness, ingenuity and handiness, there is a quality that depends upon one's understanding and ability in diagnosis. The ability to fathom the pathologic processes or sort of getting en rapport with the condition of the mechanism is no mean accomplishment. It represents something more than the utilization of mere palpation or stethoscope or test tube, it means in addition a wide knowledge of etiology, and, not least of all, confidence in both one's profession and himself. Then will one's technique be elevated to its proper place and represent something more than mere routinism.

The knack of the technician is an expression of his individuality or personality in accordance with his understanding of the principles of osteopathy. Naturally the channels of expression are a combination of the qualities or phases of the tactual sense. Given a thorough theoretical basis of the adjustment principle, it is consistent with the individual make-up that the elements of expression or execution of tactual sense would vary in keenness, relative importance and expertness. Tactual sensitiveness and appreciativeness is more or less

an acquirement; which must be duly colored with the probable pathologic conditions and gradations before co-ordination of movement and preciseness, the actual technique execution, can be enforced with any degree of confidence and actualization. All of this is potential before actualized. Delivery is dependent upon a proper understanding, perspective and proportions. Then will practice develop a certain degree of perfection.

Unquestionably there is more time wasted in technique than is really utilized. Just because one is busy does not count. Dr. Still accomplishes more in a minute than most of us in five or ten. Why? because he has the knack. He does not rub 'em up one side and down the other and then give a pat here and there. He goes to the point etiologically and therapeutically. It is neither strong-arm work nor time-killing technique. It is a thorough grounding in the principles that we lack. In just so far as we are in harmony with the osteopathic principles (if what we believe represents eternal principles) will our work, our technique, approach a stage of satisfaction.

Concentration in technique application, the same as in reading, should be cultivated. No doubt a certain rapidity of execution will secure better results with comparatively little time spent than a dilly-dally method of practice, for one's mind is more alert, his execution more precise and his judgment more reliable. High potentiality is not incompatible with deliberateness and carefulness. The end of technique is not to kill time or to amuse the patient, but to apply one's conception of the principles to the case before him. The problems presented should create or stimulate a method of action not based upon some imitation, but instead founded upon the individual principle.

It is the osteopathic viewpoint that we should cultivate and make a part of our daily life. This means assimilating, thinking and acting in accordance with its precepts, which does not mean a narorw, distorted viewpoint of life, but instead an appreciation and actual realization that the osteopathic concept is a part of the cosmic. If the saturation is complete, the order and sequence and completeness of its elements will so appeal to, and become part of, us that we can see its eternal truths blazed forth in stones and trees as well as in sentient organisms. We do not wish to labor the point, but technique appreciation and understanding represents something far more than an occasional isolated mechanical application. Dr. Still has shown us it is an application of the universal laws of order. Thus, to think in accordance with the osteopathic philosophy means something far more than to become proficient in the technique side. The viewpoint should become so firmly rooted that its stimulus adds zest and color to the intellectual and imaginative interests and tastes, in fact, part of the mind. There should be vision and imagination, provided it is broad and accurate, in the profession of osteopathy, the same as in any walk of life, in order to elevate it above mediocrity.

Now, let us glance over the etiologic field and emphasize a few of the features, wherein some sort of an understanding will modify our technique. The preventive field is in a class by itself. Here it is the potentialities, the possibilities, the accumulative irritations, the negative factors, etc., whether pertaining to the osteopathic lesion, hygiene, sanitation or what not that comprise a really extensive and fruitful field. We will pass by this, but the possibilities for osteopathic technique are simply tremendous.

We will first speak of the strictly osteopathic lesion, the mal-adjustment. What is its significance? lowered resistance or impoverished nutrition? Any blockage of nerve fiber or vascular channel cannot mean anything else. And certainly this is enough. The first step in disease study is its beginning. If we can locate the inception of a disorder, we have usually accomplished considerable. The involvement is commonly slight at the start. Within all probability there is no dividing line between functional and organic disorders, both having a structural basis. No doubt nature adjusts many lesions, or holds them in abeyance for an indefinite period until added damage is forthcoming, or time has established accumulative phases, or general debility or lack of tone has complicated the issue. Here as with other things in this life it is the small beginnings and the aggregate of little things that count for so much. Co-operant forces frequently furnish the key to the problem.

Life has been defined as "the continuous adjustment of internal relations to external relations." This will serve our purpose for a working basis. But we should be careful to distinguish between internal and external—physiological activity of assimilation and food in the alimentary canal, or nutritive processes and certain hygienic measures, for examples. By the co-ordination and concatenation of skeletal, visceral and tissue nervous impulses tone and nutrition are maintained. In its finer division and interpretation to draw the line between internal and external relations is no small task. The division is there even if we are not always able to discover it. Like mental and physical growth and development which are dependent upon environment and the right discipline, the two are sharply contrasted, still there is an intimate inter-dependency. No doubt health is the normal course—wherein friction is reduced to a minimum. In health there must be a continuous adjustment of internal relations to external relations. The

condition of the body and the fitness of the environment are the basic problems to receive consideration. The health state is quite dependent upon these. The work of the physician is to investigate the bodily condition and the environmental fitness and set aright the adjustment forces if indicated and possible.*

Health to the physician is represented by the processes of growth, development and repair. A certain activity and strife are essential to the processes. Reaction and adjustment in order to promote normality is demanded. The interaction of bodily and environmental forces in their broadest sense is absolute requirements. But the strain and stress incidental to this activity may easily extend to the abnormal and friction, pathologic conditions, is the result. Hence, the physical plane of the body becomes deranged and distorted and the osteopathic lesion arises. Verworn in "Irritability" says, "Disease is life under altered vital conditions and altered vital conditions are stimuli."

The influences more or less constantly active that initiate, modify or inhibit the health processes are as numerous and extensive as the forces that comprise life itself, for health is a "state of being hale, sound or whole, in body, mind or soul." Health is simply a condition, and ill health, also a condition, may present infinite gradations. Naturally our technique must be as individual as the ill health conditions and gradations are varied and individual.

Education, discipline, right living mean nothing less than the application of adjustment forces. Habits, thoughts, exercises, food, air, clothing and everything that makes up our daily regimen are the factors of our environment and hygiene that enhance or inhibit and modify the inherited and acquired bodily condition. And only thereby is growth and development attained and the state termed health maintained. Conversely excessive strain and stress and storm and "disharmony" necessarily result in disorder.

Over-fatigue and lack of nourishment probably occupy first place in the etiologic field. This must be basic to much ill health, for then the barriers are down and tone is held in abeyance. This means lowered resistance, and as a consequence the body is not only a prey for many physical irregularities and infections, but the mental realm is subject to many distortions. Muscular pull and balance and poise and equilibrium are irregular and upset. When muscular tone is disturbed, the forces of gravitation and excessive strain and stress the more readily upset the bodily balance, and osteopathic lesions of a localized order are inaugurated. The effects of atmospheric changes are more pronounced, as well as accidental happenings more disturbing in quality when fatigue is rampant and resistance is lowered. In fact, the entire list of the small beginnings of disease are more active in severity or more virulent in character.

Let us enumerate after a certain order, some of the causative factors that modify technique application:

(1.) *Over-fatigue from work and worry.* Undoubtedly worry is more nerve racking, ennervating and depleting than work. Many of the so-called neurasthenic states are due not to true nervous exhaustion, but to a constant "short circuiting" process, induced by long continued worry. The mental activity gets into a groove, and as a consequence a comparatively few neurones are worn threadbare at the expense of general health activity. Whereas, if only a few of the many remaining but little used channels can be summoned into use, and the leakage stopped by so doing, recovery oft times well nigh instantaneous. Such conditions are basic to most cases of insomnia. No doubt, true exhaustion will be forthcoming if long continued, but such instances are in the minority.

Over-fatigue from work, wherein the rest periods are not sufficient to permit recuperation, is a common source of beginning disorders. Aside from the deleterious metabolic changes in the tissue and the overloading with waste material and the neutralization of the antibodies preventing recuperation and repair, untoward effects of atmospheric changes and ready invasion of micro-organisms, the condition unquestionably predisposes as well as actualizes osteopathic lesions which further complicate the issue. Certain tissues inherently weak or over-worked are more or less strained, nerve force inhibited and a mechanical unbalance induced which may readily lead to not only muscular and ligamentous changes and lesions, but to the establishment of the osseous lesion as well. Lack of equilibration is brought about, the slumped state, and the

*It may be of interest in passing to note that Alfred Russel Wallace in his recent book, "Social Environment and Moral Progress," reiterates and emphasizes a view of his first made public in 1864 of special significance. It is this: With the advent of Man, through the subtle force so-termed *mind*, a being arose "who was no longer subject to bodily change with changes of the physical universe—a being who was in some degree superior to Nature, inasmuch as he knew how to control and regulate her action, and could keep himself in harmony with her, not through any change in his body, but by means of his vast superiority in mind." If this is true "it renders impossible any important change in the external form of mankind." This received "the approval both of Darwin himself and Herbert Spencer, and I am not aware that anyone has shown any flaw in the reasoning by which it is established."—Pp. 110-111. Davenport in "Heredity in Relation to Eugenics," emphasizes the importance of perfect bodily structure and environmental conditions that maintain at its highest point internal resistance. This is in absolute harmony with osteopathic principles.

effect upon co-ordinate segments may be marked. All of this is familiar to the observant practitioner.

Both of these conditions have their action and interaction upon brain and body and their significance to and bearing upon technique are evident. When we stop to realize that the brain itself contains from a thousand to three thousand million distinct neurones, with innumerable connections and that even a hard working genius does not use more than a millionth part of his brain capacity, is it any wonder that constantly over-used or abused nerve centers are apt to remonstrate, and that the organism will in many instances quickly recuperate when the short circuit is removed, whether over-use, abuse or a lesion, and the almost infinite resources of the other centers and channels are called upon? The object lesion of technique modification, application and individualization is evident.

(2.) *Insufficient nourishment.* Probably in our daily practice we are too prone to think that the innumerable lesions of a mechanical inception, the osteopathic lesion for example, are superinduced by trauma, as from a fall or blow. Although all changes may in their final analysis be largely interspected upon the mechanical plane, still we are not always cognizant of the wide range of causative factors or forces. The more complete our knowledge and the more extensive our perspective is, the nearer will our technique approach a more satisfactory and finished art.

Of course sufficient food and air are requisites. However, not always do we take into consideration the practical application of this truism in analyzing and adjusting lesions. Tone, posture, poise, equilibration of the tissue, as well as of the body generally, are all dependent upon nutrition. Nervous integrity that maintains all of this is directly traceable to the circulating tissue. But we do not always stop to think that the muscles and the connective tissue and its several modifications depend absolutely and directly upon nourishment for their well-being. How many lesions are directly traceable to lack of sufficient muscular and ligamentous tone and response that have their origin in faulty nourishment? We do not mean a disturbed local nutrition due to obstructed vascular channel or nervous fiber, but to a faulty or unbalanced diet. Rachitis comes to one's mind at once. Probably all of us at times suffer the consequences of an irrational dietary.

Certain tissue and organs will feel the effects sooner than others. The effect upon tone and poise are among the first. And if this condition is coupled with overwork, the impairment may be most disastrous. Deleterious inherited strains crop out, congenital defects are noticeable, anatomical and physiological weak spots become threadbare, and the mechanism as a whole is inpaired. Easily produced osteopathic lesions may be the result or the cause. Consequently, our technique will be modified in acordance with our diagnostic acumen.

(3.) *Atmospheric changes.* Cold and wet are prolific sources of osteopathic lesions. If the body is vigorous and the nervous system intact, we quickly adapt ourselves to the changes. Everyone has noticed how during a cold snap, for example, we quickly become aware of three or four degrees or less of change in temperature, and how after a very short time our bodies become accustomed to the difference, provided our nervous system is normal.

No doubt the tension and strain upon the soft tissues brought about by cold and wet not only produce soft tissues lesions, and even bony ones, but also render the tissues through this change susceptible to infections. Here again fatigue and poor nutrition may be contributing factors. Aside from muscular tensions and superinduced bony lesions, the ever present micro-organisms that only require a certain tissue soil in order to rapidly multiply always demand consideration. The practical problem of immunity is largely one of susceptibility, and no doubt the osteopathic lesion, whether of the soft tissue or of the deep seated bony structure, is a most important contributing factor. Phagocytosis, elaboration of the antibodies and dilution of the toxins unquestionably can be favorably influenced (in fact, is a common daily experience) by correction and adjustment of these lesions.

Here in the influences of cold and wet we have one of the best and most common illustrations of how osteopathic lesions are produced irrespective of trauma after the usually accepted meaning of this term. Contraction of soft tissues, aside from the direct effects of cold upon cellular activity, quickly impairs freedom of circulating fluids and consequently all related tissues are involved. Then, in addition to all of this, aside from the invasion of micro-organism, is the disturbance of physiologic action of the muscles and connective tissue, bringing about an unbalanced tension and pull and through their ligamentous action a more or less pronounced, and oft-times chronic, osseous lesion.

Naturally our technique will be modified and adapted in accordance to the etiology and the pathology. In acute cases perhaps soft tissue work will suffice, although there may be underlying osseous lesions and muscular contractures that predispose. In subacute and chronic states, both soft tissue work and bony adjustment will be necessary. In these cases, in many instances, bony adjustment will be fundamental for the acute muscular tension has

subsided and ligamentous and connective tissue changes are maintaining the bony lesion. Nevertheless, we should keep in mind all the tissues, and not emphasize one tissue at the expense of others. In anatomy and physiology, although there is variety of tissue and action, still there is a combined harmony. Multiplicity of the composition and function should not be emphasized at the expense of unity.

(4.) *Infections*—No practician of any school can afford to ignore the present day knowledge of infections. That they occupy an important niche in the etiologic role is well known. Not only a goodly percentage of acute disorders arise from infections processes, as exciting causes, but not infrequently they are of commanding importance in chronic diseases. That the respiratory, disgestive and genito-urinary tracts are common sources of infections is well understood by every live physician. Acute conditions are usually more easily discoverable, but some of the chronic involvements of viscera and joints are at times fairly well masked from the etiologic standpoint.

Fortification of bodily resistance and hygienic, preventive and sanitary measures, and the elimination of the osteopathic lesion will go a long way in reducing the number of infectious diseases to a minimum.

(5.) *Lack of exercise.* Health and all it implies, growth, repair, development, etc., is absolutely dependent upon a sufficient amount of exercise. This is true whether we are speaking of the organism as a whole, or any organ or member, as the liver or brain or arm. Growth and development to the child requires great and varied activity, but all through life, health and repair, whether of mind or body, requires a certain amount of activity to maintain health. All of this is fundamental physiologic teaching. There is a happy medium, a correct balance, wherein the processes of health are best brought about and maintained through sufficient exercise to initiate and establish the forces that enter into and bring about nervous and chemical co-ordination and metabolic transformation. Upon the other hand, as we have seen and well know, deleterious results will be forthcoming, if the exercise is too severe or prolonged.

Most fatigue is probably brought about by worry or too close mental application. Too much physical exercise is not the rule; in fact, the opposite is apt to be the tendency. Both the physical and mental mechanisms are capable of tremendous exertion and activity provided we are wise enough to vary the activity. Much time and exertion are dispersed and absolutely lost by lack of ce concentration. We have an excellent example of this in technique. Then rest does not necessarily mean to sit down and put the feet upon the desk, but instead to do something else; to use another combination of neurones.

From a physiologic point of view the osteopath has one of the best opportunities possible to develop his brain—the constant usage of his tractual and muscular senses. This is a basic point. The average individual through lack of exercise as well as lack of variety of exercise impairs his vitality and health. Tone of tissue is partly lacking, the cells are not normally responsive, elimination is poor and the mental faculties are more or less clogged. All of this means a greater or less step toward devitalization. And as a consequence the potentialities are right for the actualization of various osteopathic lesions.

To exercise properly so as to keep the body in the best possible condition does not mean to go and do a lot of gymnastic stunts of endurance or tremendous exertion. Muscular consciousness is not the desired end, unless one is desirous of this quality along with others for an intended prize fight exhibition or foot ball scrimmage. For the average every day individual comparatively light exercises, like walking or horse back riding carried to a point of fatigue, not beyond, are by far the better. Best of all, a game like golf wherein exercise is combined with skill that develops nervous co-ordination will accomplish the most physically and mentally. Maintenance of physical and mental health or balance through skillful and healthful exercise in the open unquestionably goes far to prevent osteopathic lesions.

(6.) *Personal hygiene.* Much of the foregoing comes under the head of hygienic measures, but we wish to emphasize two or three other points a little more fully. No doubt every practician is fully aware of all this, but the trouble is he does not always look at the bodily economy from a bird's eye viewpoint at first, and then details afterwards. He is apt to treat the many little features that make up a day's work as detached or isolated facts instead of considering the aggregate. Just as in the several lesions that may be presented in a certain case he becomes mesmerized by the separate details instead of eliciting the probable mechanical or pathological connection of all the details. As we have said before the aggregate makes up the whole. The several factors of the whole have a certain place to fulfill. Failure to duly proportion or to locate one factor may be just the cause of a faultily applied technique.

Ennervating habits, abuse of function, wrong dietary, improper clothing, unnecessary work, irregular rest periods, impure air and the thousand and one features of our daily regimen that in their totality make up the daily work and recreation, undoubtedly are prolific sources potentially and predisposing of the

osteopathic lesion. And an observance and correction of the personal hygiene are just as much an essential portion of technique adjustment as it is of prevention of lesions or of the maintenance of the integrity of parts after the lesion is adjusted. These small beginnings of the lesion should not be overlooked, for in the final analysis they are the small beginnings of disease.

Closely associated with all of this are such broad subjects of insanitary surroundings and faulty elimination. We will just barely mention these also. But they enter as very important contributing factors to the production of the osteopathic lesion. Maintenance of balance of the metabolic forces that comprise the condition of health is what we term normality; any interruption of this balance, for example, the osteopathic lesion, initiates a condition of health we term abnormality. So long as our vehicle of activity is physical, bodily conditions will be noted by the physical changes, the mechanical, of which the osteopathic lesion broadly and extensively expresses a sound and scientific viewpoint. The forces that upset balance or lead to a disturbed mechanism, possibly years in the inauguration, are a very important part and parcel of etiology. We study the laws of health in order to discover guides that we may apply in the prevention, palliation and cure of diseases. The mere art of technique, of adjustment, is only an attempt to assist nature by correcting the apposition of the anatomical parts.* A much wider technique will survey the field from etiology to therapy. This then not only modifies technique from the individual standpoint, but tenders a semblance of genuine scientific preciseness.

(7.) *Certain diseases.*—There is a long list of diseases, of which rickets and infantile paralysis are good examples, that readily predispose to osteopathic lesions. And, of course, the converse of this is true, osteopathic lesions will predispose and make possible a host of diseases. Any disturbance that throws the bodily mechanism out of balance, and most diseases do locally or generally, quickly lead to various osteopathic lesions. But there should be the diagnostic acumen to determine which are primary and those of secondary, compensatory and reflex origin. Naturally technique will vary most fundamentally according to the range of primary and secondary presentations. No doubt many a treatment fails because of faulty diagnosis with a consequent inappropriate technique. Technique cannot be held up as an independent entity or procedure. We should always take into account the causative forces, the pathology and the environment; all of this necessarily colors the character of our technique. A part can never equal the whole.

(8.) *Trauma.*—We left accidental happenings, strains, sprains, falls, blows, and various traumatic influences until the last in this rough sketch. Although trauma like faulty posture, may readily affect and disturb the healthy individual, still in the majority of instances it is not the only one means that brings on the evil day. Very frequently there is a longer history comprising one or more of the factors described above. The lesion at best is only an incident or interruption of the health balance, and as a consequence, it is the totality of things that we wish to emphasize. Anything that depletes locally or generally, that brings out the weak and threadbare spots, should be studied as assiduously as the exciting factor. Then conversely the abused, overused and the short-circuited forces if properly conserved and directed will establish, promote and preserve health.

Recognition of various causes of the lesion and disease is not to be regarded as license to "muss the anatomy" in applying technique, or to be unduly side-tracked by some tangential hygienic measure. Precise and definite technique has always been and always will be the acme of characteristic osteopathic therapy. Confusion should not arise in interpreting the forces that initiate a lesion and the character of the lesion itself, or in other words, the manner of production and the specific indications for readjustment after the inauguration of the mal-relation.

14 W. Washington St.

*Harris, in "Nerves," makes a statement that every practitioner may well ponder over: "Stimuli after transformation through the proper end-organs are more efficacious in bringing out response than are stimuli untransformed into nerve-impulses. In fact, only nerve-impulses are the proper stimuli for nerve-fibres; any other sort (pressure, chemical action, electricity, heat, cold) are unphysiological for the nerves themselves."

SANITATION

TREMATODA OR FLUKES

C. A. Whiting, D. Sc., D. O., *Editor*, Los Angeles.

The scientific name of this group of parasites (Trematoda) means to bore a hole. The name is used to express the difference in character between these parasites and the Cestodes (Girdles), the latter living outside of the true body substance while the former inhabit some of the organs of the body. Consequently the name Trematoda is rather descriptive of their habits of life.

Few parasites are more widely distributed than the Trematodas and very few have a more complicated and interesting life history. They are found in their mature state not only in a very wide range of mammals but they are also found in many birds and, in some cases at any rate, they inhabit the bodies of invertebrates. To illustrate their peculiar nature, it

may be stated that one species has been found only in the frontal sinus of the skunk, while another species is only known to live in the nasal passages of the duck. It is, however, in some of the domestic mammals that the greater part of their disastrous work is done. It is only occasionally that they occur as human parasites but when they do, the result is usually fatal.

It is by no means unusual for parasites to pass their lives in the bodies of two animals. Among the many cases of this kind may be mentioned the Trypanosome, the various Malarial parasites, all of the tape worms and a number of the round worms, but the flukes add to this complicated existence one more intermediate host. That is, they live in three animals during their life cycle. From the fact that two intermediate hosts are common but not necessary to the life of the fluke, one may infer that the second host is a comparatively recent modification in the life of the fluke.

As the life history of the sheep fluke has been carefully studied, I select this as a typical form to illustrate the complicated life history of the group. Let us start the history with the mature fluke living in the liver of the sheep. Eggs are laid in large numbers in the biliary passages and these find their way through the various bile channels into the intestine of the sheep. With the general debris of the intestine these eggs are expelled from the body of the sheep. Should they fall upon the dry earth, they soon perish, but if by chance they drop into the water, they soon develop into a free swimming ciliated worm which after living for a short time in the water, enters the body of a snail. Here they reproduce themselves asexually and ultimately cause the death of the snail. If this occurs on the land, the young worms soon perish, but if the body of the dead snail falls into water, it quickly decomposes and the young worms are set free. After enjoying their freedom for a short time, they enter the body of another snail where they again asexually reproduce. This second snail is not as a general thing killed but it crawls up on stalks of weeds and herbage growing in the water and there glues itself to the stem of the plant. If by chance, this stem is eaten by a sheep and the snail swallowed, the parasites are set free in the stomach of the sheep after the snail is digested, and quickly passing through the stomach into the upper intestine, they make their way to the liver there to begin the round of life again.

It is practically certain that it is not absolutely necessary for the fluke to enter the body of its second host and that if the second host is not readily at hand, the free swimming worms at length attach themselves to herbage growing in the water and in this form may be directly taken into the stomach of the sheep and the life cycle may be completed in this way. It is also quite certain that if they should be inadvertently swallowed by a human drinking the water, the person may thus become infected with these most dangerous parasites. For that reason all water to which sheep have access should be regarded with great suspicion.

The life of the fluke in the sheep has been divided into four pretty well defined periods. The first period is that of immigration or entrance to the body. This often occurs in the autumn and it requires from four to thirteen weeks for the fluke to become ensconsced in the sheep's liver. During this period the animal seems to suffer very little from its unwelcome guest and ordinarily no change is perceived in its health. This period of imigration is followed by a period of anemia. In Utah, sheep are in the anemic period more often in November and December. If the animals have become fat by this time, the fattening is soon checked and the mucous membrances of the mouth and nose become pale or yellow. The sheep is sluggish in its habits and usually has a marked fever. The feces are normal in appearance but usually contain large numbers of the eggs of the fluke. The anemic period is followed by a period of wasting. This may occur during the month of January. The sheep becomes greatly emaciated, the mucous membrance is greatly blanched, the respiration is quick and labored and the appetite is very irregular. Abortion is very common among the females, and the face, legs, larynx, etc., become greatly edematous. Death is very frequent during this period.

If the animal does not die, it passes on to the period of the emigration of the flukes. This may occur during May and June. For some unknown reason, the flukes frequently leave the liver at this time, pass into the alimentery canal and are voided from the body of the sheep. When this occurs the sheep makes a gradual, but never complete, recovery. The liver heals but with the formation of a large amount of scar tissue.

These periods are never so well marked in the human being as in the sheep, and yet one who is infected with the fluke worm may pass through all of these stages, recovery not being entirely unknown.

Safety both of the human being and animals demands the one thing which seems to be the basis of all hygiene, and that is cleanliness. Water which is kept entirely free from the possibility of contamination can never become the means of bringing about the infection either of man or beast.

The Pacific College of Osteopathy.

HYDROTHERAPY

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HEART TONICS

While Alcohol lessens the power of the heart, as shown by the experiments of Hare it at the same time weakens the constrictors of the vessels, and so dilates the small vessels and lessens blood pressure. In other words, alcohol, while lessening the power of the heart, at the same time lessens the amount of work it has to do. If the work is lessened more than the cardiac power is weakened, there may be a temporary gain to the patient in a given case.

Digitalis produces an effect the opposite of that of alcohol, causing the heart to contract with greater vigor, and also lessening the calibre of the small vessels, thus increasing peripheral resistance in the blood circuit. In other words, digitalis increases the vigor of the heart, and at the same time increases its work. Here again there may be a temporary gain in the given case, but this advantage is not always to be secured.

It is most profitable to note the difference between the effects of water and those of alcohol and digitalis. *Cold increases the working power, while diminishing the work.* Moreover, alcohol and digitalis, both bring toxic substances, add to the toxemia which is often a cause of cardiac inefficiency, while, on the contrary, hydric applications aid in the removal of the disturbing poisons.

There is no more powerful means of exciting increased activity of the heart than by hydrotherapy. Short, very hot fomentations over the heart, the application of large very hot or very cold compresses over the entire chest and trunk or to other large arras, hot and cold aplications to the spine, hot water drinking, and the hot enema are all efficient means of stimulating a flagging heart to increased action.

Prolonged cold quickens, then slows and energises the heart. Prolonged heat slows, then quickens and weakens it. Hot applications over the heart should be avoided where there is any considerable degree of cardiac dilatation, as, in cases of this kind, the indication is for withdrawal of the blood from the heart, through dilatation of the surface vessels by means of applications to the general surface, as cold friction and carefully graduated passive exercises, rather than for excitation of the heart muscle.

A very short application of cold to almost any part of the body, especially the chest, stimulates the heart. The most excellent effects may be obtained from the application of cold over the heart in cardiac insufficiency. This procedure increases the force of cardiac contraction. The preumogastric is meanwhile so acted upon as to diminish the frequency of the beat. Convenient and effective as cold applications to the praecordia are the ice bag and the cold compress.

The ice bag must not be used continuously as the cutaneous nerves will become insensitive and the reflex stimulation will cease or change to inhibition. It should be applied over a thin layer of flannel for half an hour every two to six hours and the cooled surface afterward treated to gentle friction.

The cold compress consists of a folded towel or half a dozen thicknesses of cheese-cloth of sufficient size to cover half the front of the chest and slightly wrung out of water at 60° or 70°. In case of cardiac weakness accompanied by pulmonary congestion, the entire front of the chest should be covered. A constant stimulation of the cardiac centers is maintained and tone is imparted to the heart.

In the systemic reaction to general cold applications there is first a spasmodic contraction of the small vessels, later an active dilatation, accompanied by a vigorous rhythmical action of the vaso-constrictor muscles and acceleration of the blood stream. The heart shares in this sympathetic nerve activation. Cold mitten friction, rubbing in a shallow cool bath and the rubbing wet sheet bath are excellent for this purpose. In cases of extreme cardiac weakness, with degeneration of the heart muscle, or valvular disease, cold friction, with a mitten or cloth is to be chosen for the reason that complete general reaction is produced, without sudden displacement of the blood to the interior. This bath should be employed following a sweating treatment when nephritic toxemia is present.

OPHTHALMOLOGY

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DISEASES OF THE CONJUNCTIVA.

Conjunctivitis. Many things are demonstrated on the grounds of the bias of the writer. It is quite well demonstrated that about 85% of human ailments will get well under good care without any form of treatment. This must be credited to the "tendency to the normal" of the body, to what nature does for herself. But this makes a great field in which to exploit remedies, systems and theories. A person claiming to treat disease by some remedy or method tries it on some one for something sooner or later; the patient gets well and promptly claim is made to credit for the cure; it is pointed to as proof of the truth of the theory of causation of disease. The facts in the case may be that the patient got well in spite of the remedy and is absolutely no proof of the theory of causation.

It will be my effort in these articles to keep within the bounds of reason and make no false claims. Theories will remain theories until properly proven.

The conjunctiva is a mucous membrane that coats the posterior surface of the eye lids and the anterior surface of the eye ball. It forms a sac, which is slit open in front in the line of the palpebral fissure.

The conjunctiva consists of three parts (1) the conjunctiva tarsi, the part on the lids; (2) the conjunctiva bulbi, the part on the eye ball; and (3) the conjunctiva fornicis, the part connecting the first and second; it is the retrotarsal fold or the region of transition, often called the fornix. The first part can be seen by everting the lids. It is adherent to the tarsus. It is covered with a laminated cylindrical epithelium. The membrane contains an abundance of lymphocytes similar to adenoid tissue. This increases with every inflammation of the conjunctiva. This is why a person who has had a long spell of chronic conjunctivitis has thickened lids after they get well. It is on the same principle as enlarged tonsils after repeated attacks or long continued tonsillitis. The blood supply of the conjunctiva of the lids is from the muscular branches of the ophthalmic artery.

The bulbar conjunctiva continues over the cornea. It is covered with layers of pavement epithelium. Its blood supply comes from the posterior conjunctival vessels about the retrotarsal fold, and the anterior ciliary arteries which come from the four recti muscles; these two systems anastomose in the conjunctiva. Conjunctival injection or congestion shows a superficial net work of larger or smaller vessels that move with the conjunctiva. The color is scarlet or brick red. Ciliary injection occurs as a rose red or pale violet zone around the cornea; spoken of as peri—or circumcorneal injection. It does not move with the conjunctiva and occurs more with diseases of the cornea, iris and ciliary body.

Conjunctivitis is classified for convenience in study, diagnosis and treatment as follows: (1) Catarrhal, (a) acute (b) chronic (c) follicular; (2) gonnorrhoeal; (3) ophthalmia neonatorum; (4) trachoma; (5) diphtherica; (6) eczemetosa; (phlyctenulosa) (7) vernalis (8) tuberculous (9) traumatic. This is chiefly after Fuch's classification. It is the clinical classification.

In the etiology of conjunctivitis a great variety of germs are considered by different writers. Collins and Mayo give a report of "germs found in normal conjunctiva":

Bacillus Xerosus in 94% of normal conjunctivae; Staphylococcus Albus in 70%; Pneumococcus in 9%; Diplobacillus in 6%; Staphylococcus Aureus in 6%; Streptococcus in 5%.

If this be true, and I do not doubt their statement, we are practically compelled to say that these germs at least are only secondary in the etiology of conjunctivitis. Just at this point osteopathy comes in with its flood of light and makes it easily explainable why some conjunctivae become inflamed while others do not when all have the germs present. The lesion disturbing the integrity of blood supply and nerve force to the eye is the primary cause while the presence of germs may be an aggragating cause. The lesion prepares the soil in which the germs thrive sufficiently to become an irritant. There are all gradations of this soil preparation. The more fertile the field (i.e. the more profound the effect of the lesion) the more virulent germ life may become; the resistence is proportionately less.

In order for one to give the best care in these cases it is quite essential that both the primary and secondary causes be given attention. Some good germicide or antiseptic is to be used with intelligence. This is in harmony with the principle of antisepsis and cleanliness taught by osteopathy from its inception. The use of the microscope in the bacteriology of conjuctivitis aids in more definite diagnosis and the selection of a proper germicide. For the Koch—Weeks bacillus, the pneumococcus and the influenza bacillus silver nitrate 1% or a 25% solution of argyrol is used; for the diplo-bacillus (Morax-axenfelt) zinc sulphate 1 gr. to the ounce is almost a specific.

A good way to prepare the zinc prescription is:

℞ Boracic acid and water ℥i
Zinc Sulphate gr. ℥i

the boric acid and water of course being a saturated solution. One drop in each eye about four times a day. If one can not have the use of the microscope to make specific the diagnosis the zinc solution may be alternated with the argyrol as the germicide. Ice cold applications are good in many of these cases.

Catarrhal Conjunctivitis Acute.. This mostly affects the conjunctiva of the lids in the light form; if severe it invades the bulbar conjunctiva. There is redness and swelling and increased secretion which dries at night upon the edges of the lids and glues them together. Eyes better in the morning and worse toward evening. Corneal ulcers and iritis may arise as complications; may become a chronic inflammation.

Etiology. Text books on the eye give bacteria as the chief cause, some scarcely mention anything else. After discussing how the bacteria get there and multiply, they usually bring in some statement to indicate that in many cases no bacteria can be found in the secretions from the conjunctiva. These latter are unaccounted for in the etiology. Catarrhal conjunctivitis is non-specific in its origin so far as any particular germ has been investigated.

The science of osteopathy will fill in the missing links to works otherwise very exhaustive on the eye. The osteopathic etiology of this disease of the eye will be discussed in the next issue.

Majestic Building.

CORRECTIVE EXERCISES

R. Kendrick Smith, D. O., *Editor*, Boston.

An exceedingly simple and practical method of strengthening abdominal muscles and benefiting abdominal viscera by corrective exercise is given by Dr. Stewart Lewis in the *New York Medical Journal* of January 24th. Here is the author's description of the exercise:

The apparatus used is exceedingly simple; it consists of bags varying in weight from one to five pounds. For office use four bags of one, and four of five pounds each are most generally useful. They may be *prescribed* as high as twenty pounds. The most convenient filling is oats; sand, however, is much better, although it possesses the disadvantage of sifting through cloth and must be held in oil-cloth, the edges being bound with adhesive plaster and stitched. A washable cover is provided. A great advantage of this method is that the patient's strength may be measured and his progress noted from day to day.

The patient lies on his back. One or more bags of suitable weight are placed on the abdomen. These are to be now raised and lowered by the action of the abdominal muscles, continuing to moderate fatigue. The number of motions accomplished will form a crude test of strength. The thickness of the abdomen and range of motion may also be measured by a rule with sliding rod. It is always necessary to explain to the patient that this is *not* a breathing exercise; he should not hold his breath.

A prescription is now given covering the weight of bag to be used, the number of repetitions, and especially the posture. A definite daily progress must be insisted on. The patient will often be interested in working this out for himself. A rather heavy bag and fewer repetitions is better. The patient must not shirk, but must each time raise and lower the weight as far as possible. He must carefully count the repetitions to measure his gain and keep his interest. Often improvement in health goes hand in hand with gain in strength.

The wide applicability of this measure to abdominal disorders will be evident, especially when we add the very important adjunct of posture. Enteroptosis requires elevation of the hips on pillows. Some backache cases need a pad or pillow under the sacrum or lumbar curve; round shoulders are corrected by pad under the curve, no head pillow being allowed. By interposing firm pads under the sand bags the action may be localized, as in replacing prolapsed stomach or kidneys, making intermittent pressure for dilated cecum or atonic stomach, etc.

Current Comment

Chas. C. Teall, D. O., *Editor*, Fulton, N. Y.

THE MECHANOTHERAPEUTICS OF ACUTE CROUPOUS PNEUMONIA.

When a medical idea comes via Europe it is bound to attract attention from the brethren on this side of the big pond so, the article under the title above, printed in the *New York Medical Journal* from the pen of Dr. Cyriax, London, should not be lost on the American M. D. We are indebted to Dr. Tucker for the material. The article has a most complete reference, some 36 in number, and almost entirely from German sources and nearly all under the head of massage or vibration. Few are from strictly medical sources as the author says in the introduction. "Otherwise medical literature on the subject is conspicuous by its absence, and this is the author's reason for enlarging on the subject."

As early as 1847 Branting made an attempt to treat pneumonia by means of manipulations but only used arm vibrations and chest lifting. In the early seventies Kellgern systematized his method of treating the disease only to have it strongly condemned. Other attempts were made and in 1903 the author of this paper went into it with considerable detail. Speaking of pathology and symptoms he says:

Those points need consideration in view of what follows. As is well known, the onset of the disease is fairly sudden, the respiratory change coming on early. The respiratory act very soon becomes quick, shallow, and labored. The cause of this respiratory distress has been variously ascribed to pain, fever, loss of part of the pulmonary function, nervous elements, circulatory disturbances, etc. To my mind by far the most important cause—and the one which hitherto has almost escaped recognition—is reflex contraction of certain of the muscles of respiration, this reflex contraction being in the majority of cases aggravated by such direct causes as spread of inflammation, toxemia, venous and lymph stasis, etc. The contractions as a rule come on fairly early (sometimes almost immediately), and tend to become more marked during the course of the disease; then, according to whether the disease terminates by crises or lysis, they disappear either rapidly or slowly.

The reservation must be made that not all cases of pneumonia exhibit these muscular contractions, and those that do not are the least severe and least dangerous ones. Indeed, the severity of the disease is, *caeteris paribus*, proportionate to the amount of muscular contraction.

In many cases the muscular contractions are among the first symptoms, and they may become firmly established before even the most careful examination can detect anything wrong with the lung itself. This early arising of the contractions is analogous to the same phenomena as regards the abdominal organs.

This shows close observation for one not trained to look for physical defects in acute conditions. It is seldom any notice is taken of the diaphragm by medical writers so his notations on it are of interest:

Diaphragm.—The contraction may be unilateral, the half on the affected side being involved, or bilateral. There is seldom complete bilateral immobility: when there is, the case, unless this contraction is removed or alleviated, almost always proves fatal. Litten's phenomenon has been noted to be absent on the affected side in pneumonia and the diminished excursion of the diaphragm on one or both sides has been frequently demonstrated by means of the x-rays. In connection with this, it is of interest to note that diminished movements of the diaphragm have been found to be an early sign of phthisis.

The chief causes of the contraction appear to be reflex. It has been established that irritation of the intercostal nerves can readily cause contraction in the diaphragm. Hess's diaphragm reflex is the result of light percussion of the nipple; Wallein found that it also resulted from irritation of the skin in the nipple

line, or between the third to sixth ribs, or in the axilla. Quadrone found this reflex present in seventy-five per cent. of all cases: it is absent in locomotor ataxia and allied conditions. A large number of reflexes through the phrenic nerves are said to occur; according to Capps, these nerves are sensory to the anterior two-thirds of the diaphragmatic pleura.

He further takes up the muscles in the affected region in much detail but, to us, his method of treatment to overcome the conditions is of interest. It consists of various forms of vibration of which the following is most used:

Stationary Vibrations.—The operator sits at the side of the patient; let it be presumed for the sake of illustration that the left lung is affected and that the operator is seated at the right of the patient. One of the following positions may be selected:

(a) The operator passes his left hand between the patient and the bed, and places the last phalanges of his fingers which are somewhat separated over the most affected portions of the erector spinæ; he then places the separated fingers of the right hand over the most contracted intercostal spaces. This is employed chiefly for basal pneumonia and the concomitant pleurisy.

(b) The operator passes his left hand between the patient and the bed, and places the palmar aspect of his fingers, which are separated, on the interscapular region; his other hand he places over the corresponding anterior portion of the chest. This position is employed chiefly for general vibration of the chest, double pneumonia, or as a method of applying vibrations to the heart.

(c) This is the same as (b), but the operator places one of his hands posteriorly over the scapular region of one side, his other hand over the corresponding anterior aspect of that side of the chest. This is employed chiefly for apical pneumonia.

He then enumerates the benefits resulting from the treatment which covers all the pathologic conditions arising from the disease. The following is so in keeping with the teachings of the Old Doctor as to be remarkable:

Gaseous Interchange in the Lung.—The greater the muscular contraction, the greater the fixation of the thorax and the smaller the amplitude of the respiratory movement. The acceleration of respiration only to a certain extent compensates for the diminution in depth. This is easily tested even in health; a series of rapid but shallow respirations is insufficient, and it soon becomes necessary to take a deep breadth in order to remove the feeling of impending suffocation. With regard to pneumonia it must be remembered that a respiration rate of fifty is common, and that even in non-fatal cases from sixty to seventy may be reached; thus the patient suffers from an insufficient intake of oxygen and an inadequate elimination of carbonic acid.

Venous Return to the Heart.—In consequence of the diminished respiratory movement, the ordinary mechanism by which inspiration tends to cause a negative pressure in the veins—expiration the opposite—is rendered much less efficient. Venous stasis results not only in the inferior and superior vena cava, but also in the pulmonary veins. As a result there is venous congestion around the air vesicles, and this tends to reduce the proper oxidation of the blood.

This suggestion, as follows, is full of good ideas and could be used with advantage:

Active Respirations.—The average practitioner would, I imagine, at once urge that under the circumstances they were impossible on account of the intense pain caused, and dangerous because they would irritate the inflamed pleural surfaces by making them rub against each other; also that every form of exertion on the part of the patient should be strictly avoided as dangerous. When, however, the preliminary vibrations and side shakings have reduced the muscular spasms, the inflammation, the pain, etc., as already made clear, it is found that the patient can take deep inspirations and expirations with but little pain—indeed any pain which arises with the first inspiration diminishes or even quite disappears when a few more have been taken. It is often advisable to assist the patient's active efforts at respiration by simultaneous passive manipulations, generally in the form of side shaking, or pressure upon the abdomen during expiration. This greatly aids the patient's effort and renders possible much deeper respirations. Moreover, the effect on the circulation and gaseous inter-change in the lungs is much more marked. If it be found that a definitely localizable pain is the cause of the patient being unable to take a deep respiration, a short vibration specially applied generally removes it, and enables such respiration to take place with ease. The patient being thus rendered to take deep respirations, the beneficial results on the circulation of both blood and lymph in the lungs, pleura, and heart itself, are too obvious to need more than mention; their importance can hardly be overestimated.

So far the muscles of the trunk are the only ones mentioned but he does not entirely neglect the neck as will be seen:

Various Other Manipulations.—Head vibration and nerve frictions are efficacious in restoring mental equilibrium, and also in reducing the fever, although not to such a marked extent as in other fevers. I have, however, frequently effected a reduction of one degree F. by these means.

As a rule the treatment I have described is carried out three times a day in bad cases, twice in less severe ones. Each sitting should average half an hour.

I feel confident that were the manual treatment substituted for the ordinarily employed methods, acute croupous pneumonia would no longer be the serious disease it is at present. One condition must, however, be insisted on; the treatment must be applied with correct technic, and by a properly trained hand, otherwise disastrous results may ensue.

We have gone into this paper extendedly because of its general interest, also, to show how little the American physician has thought along lines which have been laid down for 60 years.

In its January number the *Medical Times* has a symposium on pneumonia and its management from five distinguished practitioners of the allopathic faith. Says S. Solis Cohen (recall his work on Physiological Therapeutics?) under treatment says:

Treatment should begin with thorough cleansing of the bowel and any tendency to constipation should be overcome by castor oil, calomel, alkaline laxatives, glycerin suppositories or enemata. The mixed bacterins may soon be developed to a point of specificity. The serobacterins (Besredka's "sensitized vaccines," but using only *killed* organisms) are best. Quinine in large doses, especially double hydrochloride of quinine and urea injected intra-muscularly, is of great service. In tuberculous cases, and sometimes following measles and whooping cough, creosote carbonate is indicated. At the outset, in the aged, and in young children, strychnine in doses of 1-120 grain to 1-250 grain should be repeated at intervals of from one to six hours. When there is marked cardiac or respiratory debility, strychnine should be supplemented by atropin or camphor. For a young child, 1-2000 grain of

atropin hourly is a good dose and method. The ammonium preparations are used in nearly all cases. Opium should not be given, except to relieve pain or to quiet excessive, unproductive cough. In case of continued weakness of the heart, if sufficiently urgent, the hypodermic use of camphor, digalen, musk, cocain, epinephrin, pituitary preparations, caffein or strophanthus will be found useful.

Dr. Mera, of Cornell Medical College, after speaking of using cold water and not drugs for a condition of hyperpyrexia, says:

Appreciating that the toxemia in terms of delirium and cardio-vascular failure are much less likely to occur in the open-air treatment than otherwise; that circulatory failure is in the vast majority of instances vaso-motor failure and calls for vaso-motor stimulants, and yet knowing that we have a very few valuable vaso-motor stimulants and furthermore are not always able to determine whether the heart is or is not involved in the circulatory disturbance, I give, then, caffeine in the form of soluble salts of sodium salicylate, or sodium benzoate, five grain doses at four hour intervals or camphor in oil ten per cent., in five grain doses at four hour intervals, or at two hour intervals or alternate them; but appreciate that their value is limited. I do not allow the circulation to falter too much before I use some member of the digitalis group, and use it in sufficient doses; we will say twenty to thirty minims of the tincture three or four times a day, or, if the case is urgent, one-half milligram of strophanthin in an adult, intramuscularly, and follow this with the doses mentioned of digitalis. While aware that the administration of digitalis in acute febrile conditions is not strongly fortified by pharmacological evidence, I am myself convinced that it is the most valuable of the circulatory stimulants in this condition.

If the case is unduly prolonged, as it sometimes is, I endeavor to discover the etiological organism by culture, make a vaccine from this and use it, following the general principles of vaccine therapy.

Dr. Earp, of the Indiana University Medical School says, under treatment:

For internal administration I use a combination of guaiacol carbonate, quinine, sulphate and spartein sulphate. Hexamethylenamin, five grains three times a day, is employed, as I believe it performs an importnat office in toxemic conditions and particularly in penumococcemia. There are times when the temperature will subside when aspirin is given. Digitalis and strychnia to be used when indications warrant and not as routine therapy. Camphorated oil used hypodermically has in a few instances served me well in the extreme failure of vital forces. When there is a great amount of lung involvement with only a small area functuating, oxygen has rendered good service and the necessity of its use should be recognized early. Too often one waits too long, using it only as a last resort and is useless at such a time. I regard oxygen as an important agent if used sufficiently early. * * *

The adoption of serum therapy in some cases has given me only fair results. Strictly speaking, experience has not made me a warm advocate of vaccines.

Dr. Jenkins, of the University of Louisville, says under treatment:

In my experience the drugs that are most useful in this particular respect are apomorphin combined with strychnine nitrate in dosage at intervals according to age. For a child two years old I would give one 1-120 of a grain of strychnine nitrate and 1-60 of a grain of apormophin every four hours. If there is much prostration, I believe that Cognac is the most useful remedy. For a child two years old I order a teaspoonful diluted with water or poured over a little cracked ice and given after the ice is melted, every three hours.

The iodides are useful along the same lines. In cases of cardiac failure digalen or camphorated oil are both useful and if necessary should be given hypodermatically.

I have no faith in remedies applied locally to the chest, unless it be a simple jacket for the chest, lined with absorbent cotton, to maintain an even temperature.

Outside of nursing and hygienic procedure there is not one word along the line of treatment that does not include drugs, so we may infer that the authorities quoted have not read Dr. Cyriax momentous article from which we have given copious extracts. Also it would seem that they put no faith in the teachings of Osler who once said in substance; "Put a seal-skin coat on the nurse; open the windows and have trust in an over-ruling Providence." We are told, however, that the modern physician places little dependence in drugs.

TREATMENT OF NEURALGIA

Editor Medical World:—My wife will be forty-five years old in April, 1914. She suffers very badly with neuralgic headache. Will you please give me the best remedy you can. I have given her salicylate of soda, Brown Séquard neuralgia tables, half strength. She will take very little medicine, but still wants something done for her head.

Bath Springs, Tenn. E. G. Howell.

To this question the editor gives many suggestions which are good, and ends with this which he may wish to be considered original on his part but which is not, we fear.

In several such cases we have found tender points beside the spinal column where the nerves make their exit, some directly in back of the head, behind the medulla, at the second, third and fourth cervical vertebrae, and even at the other cervical vertebrae. Another likely place to find tender spots is between the shoulder blades, though these may have no connecton with headache. And the supra-orbital nerves also may be very tender, especially at their points of exit over the eyes. These tender spots are located by deep pressure with the thumb, beginning at the top of the spinal column, and continuing all the way down.

We have successfully treated several such cases by vibration, using a soft rubber tipped vibratode, although a hard rubber tip will be well borne on muscular backs. This treatment should be administered two or three times a week until the cure is effected. We know that this has cured our patients because we gave them no medicine whatever during the time of the treatment.

TYPHOID FEVER.

In the *Medical World*, clippings sent by Dr. Furry, we find this from the pen of Dr. Charles H. Page of Boston. The doctor is an iconoclastic old chap who is never afraid to speak his mind as is shown by his frequent writings in many publications. Closing his dissertation on treatment he says:

I repeat here what I have been saying for many years past, that I would no sooner feed a fever patient than I would deny food to a starving creature. And as for the use of medicine and the question of one's alma mater, I would remark that at present writing I do not happen to know what medical school graduated Sir Frederick Treves; but I hardly think that he was a graduate of old Mother Eddy's school, although I do know that he regards medicine as I do. In an address before a scientific association, this physician

to royalty said: "I look forward to the time when the people will give up the extraordinary practice of taking medicine when they are sick." Neither Treves nor Page is a "Christian scientist," by any means.

Nevertheless, we find the trend is toward a liberal diet in typhoid cases and that the results are good. Will there ever be a hard and fast system of dietetics?

WHAT IS THE MEDICAL STATUS OF CHEWING GUM HABIT.

Sometime ago we had occasion to record a good word for the truly American habit, and now we have a more extended discussion on the subject from the pen of Dr. McClintock in the *Medical Times*. He says:

It is a little difficult to state positively the origin of the chewing gum habit. In this country for generations some people have been in the habit of chewing something. Gum chewing doubtless is the offspring of the habit of chewing tobacco. The young are naturally imitative, but as it is a "man's job" to chew tobacco, they necessarily resorted to something which has no back fire or penalty attached to it. Originally it was spruce gum, tar, checkerberry leaves or the soft bark of trees, until someone saw the commercial value of some flavored sugar, and sugar knows no age nor sex.

When it was discovered that the sap of the chicle gum tree made the best possible base, the manufacture of gum became a real industry, and has grown to enormous proportions, as is evidenced by the importation during the past year of about eight million pounds of chicle gum, the finished product having a market value of over $34,000,000. * * *

Chicle gum, the base of chewing gum, is collected in Mexico and other tropical countries. Of the manner of its collection, I cannot do better than to quote from an article by Geo. F. Behringer (*The Practical Druggist*, August, 1913): "The sweet, sticky nature of the sap attracts and holds countless insects, creeping and flying, after the manner of a strip of flypaper. The native gatherers of the sap are not unduly solicitous over the presence of insects or extremely careful to avoid including pieces of bark and leaves, for they are paid by the pound." * * *

There is no evidence that salivary digestion continues to any considerable extent, after the food reaches the stomach. Gastric secretion is quickly stimulated by the anticipation of food, and the acidity of the gastric contents soon inhibits the action of, or destroys completely, the salivary amylase. There is undoubtedly, a certain amount of salivary digestion continued in the stomach previous to the complete admixture of food and gastric ferments, or possibly a slight amount owing to the lessened inhibitory action of combined hydrochloric acid, the product of protein hydrate; but this is only a possibility, and to what extent it proceeds is as yet problematical. Therefore, if gum chewing is going to aid gastric digestion by a further addition of salivary amylase, there is no time to lose, and one must labor diligently for a short time. * * *

If one desires to chew gum he should see to it that the product is one which is absolutely clean and pure, conditions which can easily be demonstrated.

GENERAL PRINCIPLES OF THERAPEUTICS.

The *Wochenschrift* enters on the second half-century of its existence with an article by Heffter, chief of the physiologic pharmacologic department of the national board of health. He quotes from the founder of the *Wochenschrift*, L. Posner, 1866, "We fill up the space between the diagnosis and the necropsy with Mistura gummosa," and then Heffter reviews the progress of therapeutics during the last fifty years. He says of the efforts to find a specific drug which will destroy protozoa without injury to the patient's tissue cells, that the favorable results obtained on animals have not been reproduced in the clinic. Salvarsan, for instance, is not able to annihilate the spirochetes in man as effectually as it does in the rabbit, so that for the present mercury has by no means been crowded out of the place it has occupied for centuries as the specific for syphilis. Organotherapy has attained practical importance only in respect to the thyroid. All the other organ preparations are based on defective premises and are uncertain in their effects. In most of these preparations, he adds, it is a question of indiscriminating quackery. Pharmacologic topography is proving constantly a more and more complex study; for example, we have learned that caffein, while it contracts the blood vessels innervated by the splanchnic nerve, yet has a directly opposite action on the vessels in the brain and kidneys and on the coronary arteries, dilating them. The main point to bear in mind is that drugs influence an organ by enhancing or reducing its physiologic functioning. A diseased organ is liable to respond more rapidly to a drug that a sound organ, and the question of individual dosage is the most vital one under all conditions. When a drug fails to display the desired action it is often wise to reduce, rather than to increase, the dose. This is especially advised with epinephin, atropin and digitalis.

This more than emphasizes the unreliability of drugs and how difficult it is to resort to specific medication. In the same Journal is a paper of much interest along the same line of thought.

FIFTY YEARS' PROGRESS IN TREATMENT OF INTESTINAL DISEASE.

Ewald says, in concluding his article, referring to harmonal, that with this, as with so many of the new proprietaries, as soon as they are applied in the clinic on an extensive scale they lose their haloes. If they were merely harmless substances, aside from the waste of money, the matter would not be so bad. But when health and life are sacrificed on the altar of the new remedy, the question arises whether the manufacturing of drugs ought not to be surrounded with greater guarantees. When suddenly a number of cases of serious injury develop and even fatalities occur, there is a possibility of some carelessness in the manufacture of the remedy. Their own interests would naturally lead the manufacturers to be careful in this respect, but is this guarantee enough? Serums are standardized, he remarks, and what is necessary for serums should be exacted for medicines. He says of physical measures in treatment of intestinal disease that time has emphasized the importance of trained skill in applying them. He regards glycerin, oil of paraffin enemas as material progress in treatment of intestinal disease; the paraffin has the advantage of greater convenience and cleanliness. They prove effectual sometimes when other injections fail or have to be given in such amounts that they distend and irritate the bowels. The small amounts of fat acids that form in the oil enemas are liable to have a favorable influence on peristalsis. Great progress has been realized of later years, he adds, in the co-operation of internists and surgeons in the borderland affections. He congratulates internal medicine on its wisdom in throwing off the petty fear of being crowded out of its rights by surgery, but warns surgery not to go to the other extreme and keep in its hands too long and treat "internally" the patients who after the operation need internist care. Another great progress has been the multiplication of sanatoriums where courses of treatment can be given systematically after individual study

of the case. This of course implies specialism, but he does not think it is necessary to specialize on a single organ or part of an organ "as in America."

The *Critic and Guide* does not love the *J. A. M. A.* as can be seen but its plea for fair play is too late as the Sanitori using the serum have not been able to survive the crusade. So closes another episode of the new medicine.

THE FRIEDMANN CURE

Some subscribers have asked us our opinion of the Friedmann cure and some have expressed surprise at the fact that we did not mention it at any time by as much as a single paragraph. I have not written anything about the Friedmann turtle vaccine because personally I know nothing about it, either pro or con, and from the contradictory literature on the subject I have not been able to drawn any definite conclusions, and I do not like to write about things unless I am sure of my ground.

That the "cure" was exploited in a most reprehensible and disgusting manner, and that its discoverer, Dr. Friedmann, is anything but an admirable character, is probably the unanimous conclusion of the medical profession of the world. But this does not necessarily mean that the remedy is without any value. One may be the discoverer of a really useful invention, of a beneficent invention, and still have in himself the traits of the charlatan.

We must still be patient and wait before pronouncing a definite opinion on the subject. We must discount and take with a good grain of salt both the statements of Friedmann and Schleich on the one hand, and the biased articles of the *Journal* of the American Medical Association on the other. One thing seems to be pretty certain now: in surgical tuberculosis the remedy possesses some real value.

THE FLEXNER REPORT—
AN AD HOMINUM CRITICISM

From the bulletin of the American Academy of Medicine we reproduce the criticism of Dr. Stuver, of Fort Collins, Colo., in the discussion on the Report on Medical Education Progress of delegate Frederick Henry Gerrish, of Portland, at the (Los Angeles) meeting of the Association of American Medical Colleges, as follows:

I heartily agree with what Dr. McIntire has said in connection with this report. I also think Mr. Flexner's report is of great value, but the personal element, the "holier than thou" spirit running through the whole thing, is decidedly pronounced. While there is no question that there is need of great improvement in our medical colleges in every direction, still the fact remains that it is not so much the kind of medical college that a man attends as it is the kind of man that attends the medical college that counts. Dr. Stuver might well have added also the kind of teacher that attends the students. This is clearly proven by the fact that Dr. Simon Flexner, Mr. Flexner's brother, is a graduate of one of those little third-rate schools which are so bitterly denounced by the report.

The Carnegie Foundation Report as to many American unendowed or lightly endowed independent of university medical schools, was too unfair to be received with credence, even as to the approved university annexed medical department which Flexner so ardently barred. Its characterization of the profession's best schools, endorsed only by the limited means of non-millionaire faculties and trustees and by their labors for the betterment of the profession and the welfare of the people through long periods, when no multi-millionaires came forward with munificent endowment gifts, purely as commercial enterprises, was cruelly, coarsely and viciously unfair and unethical.

Some, in fact most, of the best and most creditable work of the profession in the country has been done and is now being done in these very disparaged schools and some of the best men in the greatly endowed university attached colleges have been taken over to teach from these denounced schools. The Flexner Foundation Report as to some of the denounced schools is like straining at a gnat and swallowing a camel.—Editorial *The Alienist and Neurologist.*

Echoes of the historic report still resound as is seen. The great Abram has now turned his attention to vice conditions and it might as well take to the woods if that valiant warrior and exponent of truth gets on its trail. He is almost as well advertised as his illustrious brother who directs the spending of a goodly bunch of Rockefeller money in the interest of—Flexner.

Correspondence

CHICAGO COLLEGE STRONG SUPPORTER OF RESEARCH INSTITUTE.

Referring to the communication of Dr. C. M. T. Hulett, in the February number of the A. O. A. Journal, concerning the opening of the Post Graduate Department of the Research Institute and the appointment of Dr. McConnell as Dean of that department, I wish to add that Drs. Hulett and Booth, Trustees of the Research Institute, conferred with the Trustees of the Chicago College of Osteopathy concerning the opening of this Post Graduate course, and when Drs. Hulett and Booth pointed out the necessity of having Dr. McConnell at the head of this department and the necessity of his severing his connections with the College as an Officer, the Trustees of the Chicago College agreed to release him for the good of the Institute and the profession, and even went further by offering the use of the college building for the Post Graduate course during the summer if the course can be established by that time, and offering to co-operate with the Post Graduate Department of the Research Institute whenever it is prepared to take up the work.

We do not wish to interfere, in any way, with the work of the Research Institute and we shall be glad to discontinue our own Post Graduate courses whenever the Institute is ready to take up the work. There has been such a decided demand for P. G. work that the Chicago College of Osteopathy was practically forced to start these courses of four weeks each, and if the demand continues we shall feel justified in continuing the courses until the Research Institute can take up the work, when we shall be glad to co-operate with the Institute in its P. G. course.

We feel that it is due the Chicago College of Osteopathy that the profession know why Dr. McConnell has served his connection with

the college as an officer and that it was due to the belief that he would be of greater service to the profession as Dean of the P. G. Department than as the head of the Chicago College of Osteopathy, and it is for the reason that the Chicago College wishes to do whatever seems to be for the best interests of the profession as a whole that we consented to spare Dr. McConnell as the head of our College.

Edgar S. Comstock, D. O.
Secretary

LARGE GALL STONES—WHAT IS THEIR COURSE OF EXIT?

In the February issue appears Dr. Jeannette H. Bolles' discussion of "Technique in the Treatment of Gall Stones" as delivered at the Kirksville A. O. A. meeting last August.

The doctor submitted a "stone weighing 54½ gr., which was passed by a man over seventy years old," and mentions the fact that "Dr. Frances W. Harris brought to the convention a stone a trifle larger, which was passed under osteopathic treatment." And then follows this comment: "The question is raised whether such large stones can be passed through the duct without causing perforation. I can only answer that we have the stones here which are undeniably Gall Stones, . . . ets."

Possible it was the undersigned who, in a private conversation with Dr. Bolles, raised the question "whether such large stones can be passed through the duct without causing perforation." At least he did raise such a question, and he still is of that opinion. And it occurs to him that the above conclusion is unwarranted upon the evidence presented: that "we have the stones and the patient lived."

Let me refer to a report which I made (P. 167. A. O. A. journal Dec., '06) of some Gall Stones of unusual size: One cylindrical, 1¼ in. long and 1½ in. diameter, (flat ends) 4½ in. circumference. Another, evidently originally resting with its flat end against one end of the first, cone shape, base 1½ in. diameter and about same distance from base to apex. "We have assumed that there must have been another similiar to this which rested at the other end of the first." There was a third stone found about ¾ in. diameter and nearly round. The patient, female about 65 years. She passed these stones following bowel obstruction, which nearly cost her life. At that time there was a doubt in my mind that the stones traversed the full length of the gall duct, as indicated by this appended comment:

"How large a gall stone will pass through the gall duct without rupturing? It seems unreasonable that in this case such were possible. Another theory is that the gall-bladder becomes inflammed, adheres to, and finally ruptures and discharges its contents into the intestine."

In confirmation of this conjecture, refer to report of a case by W. C. G. Kirchner, M. D. (p. 945, *American Journal of Obstetrics*, Nov. 1913):

"At autopsy (death following operation for bowel obstruction by another stone) the gall-bladder was found agglutinated to the duodenum. A large stone, the other half of the one removed, had ulcerated through the gall-bladder into the duodenum and was located high up in the intestine."

It would be interesting to hear the experience along this line of a surgeon who has had large experience with these conditions.

M. F. Hulett, B. S., D. O.
Columbus, O.

Among the Societies

District of Columbia.—A meeting of the District Association was held at the residence of Dr. Alice P. Shibley, February 25th when Miss Caroline Hurst discussed "The Nutritive Value of Foods."

Iowa.—The Southwestern Association held its semi-annual meeting at Corning, February 20th. The next meeting will be held in Clarinda in October. One of the features of the program was a paper, "Blood Poisoning," by Lillie E. Wagoner of Creston. Members of the organization were guests of Dr. Waren Gardner in Corning.

Minnesota.—The semi-annual meeting of the Minnesota Association will be held in Austin April 4th, when the following program will be presented: "Acute Diseases." C. W. Young, St. Paul; "Urinalysis," A. E. Allen, Minneapolis; "Technique," C. N. Clark, Faribault; "Quiz in Gynecology and Obstetrics", A. D. Becker, Preston; "Are we Physicians in the Public Mind? If not, Why not?" O. W. La Plount, Albert Lea. All members of the profession invited.

F. E. Jorris, D. O., *Sec'y*

New Jersey.—The semi-annual meeting of the New Jersey Society will be held in the Y. W. C. A. Bldg., March 14th, 8 p. m. Francis R. Finnerty of Montclair will give a practical illustrated talk on X-ray work Charles F. Bandel of Brooklyn will discuss the result of his recent tour of inspection of the equipment and facilities of the average osteopathic office. Both addresses should be well worth hearing.

New York.—The New York City society held its meeting in Murray Hill Hotel February 21. The feature of the program was an

address by R. Kendrick Smith, Boston "The Press Bureau of the A. O. A." Those present expressed great interest in the work as Dr. Smith outlined it. He presented charts showing the remarkable amount of space which the newspapers had given to meetings especially reported by the Bureau. Also there were articles on general osteopathic subjects, the publication of which he had been instrumental in securing. The society holds monthly meetings.

The New York State Society will hold its semi-annual meeting in Albany, March 21. A program up to the usual high standard maintained by this organization has been prepared and it is particularly desirable that a full attendance of the profession of the state be present at this meeting.

Among the features of the program will be actual experience with Milk Diet by St George Fechtig of Lakewood and New York. C. F. Bandel will discuss "Professional Equipment and Efficiency." The series of well known practitioners will discuss office methods and efficiency and many of the best known operators in the state will give demonstrations of technique.

R. Kendrick Smith of Boston will discuss Publicity and give practical points on how to secure proper matter in one's local papers.

The society has introduced an amendment to the medical practice act of the state which, if passed, would prevent local health boards from discriminating against osteopathic physicians in the granting of birth and death certificates.

At the February meeting of the Rochester District Osteopathic Society held at the Rochester Club the program was devoted to a discussion of "The Diagnosis and Treatment of Adenoids and Abnormal Conditions of the Tonsil." Dr. Lloyd Clark, a laryngologist, read the pricipal paper on "The Diseased Tonsil and its Sequelae."

An interesting meeting of the Western New York Association was held February 7th, at Hotel Statler, Buffalo.

R. H. Williams, of Rochester, and Claude M. Bancroft, of Canandaigua, conducted a clinic and demonstration of the practical application of adhesive dressings as an aid in corrective trearment of mechanical defects.

Ohio.—The Miami Valley Association met in Cincinnati February 19 when the feature of the meeting was an address, "Elimination and Blood Pressure" by E. H. Cosner of Dayton, Ohio.

Washington.—On February 17th, the members of the King County Association met with A. B. Cunningham. J. M. Murphy gave a splendid talk on Constipation, its causes and results. Dr. Cunningham and Dr. Hattie Slaughter led the general discussion which followed.

Notes and Personals

"PUSH THE HEALTH BUTTON"

Under this subject, a number of the leading papers published in their supplement for March 1st, an article by E. F. Bowers, M. D., who has been quoted in these columns previously. He states that W. H. FitzGerald, M. D. of Hartford, Conn. has after years of study been able to locate a number of centers in the mucous membrane of the nose and throat upon which pressure if made with a pencil or probe secures remarkable results. There are at least 300 such centers, according to this authority.

By pressure in one point teeth may be extracted without pain; growths are absorbed, and many hopeless cases from various diseases restored to life by pressure on a given point which the writer claims Dr. FitzGerald has located.

This may be simply a Sunday newspaper story or it may be that Dr. FitzGerald has discovered a series of reflexes which may prove useful. Further developments will be awaited with interest.

THE SURGEONS AGAIN

The American College of Surgeons, spoken of in the papers as "an honorary organization" in spite of the opposition within the profession, is planning to erect a centrally located home to be the Mecca of the surgeons of the continent in some other city than Chicago; that city being the head-quarters of the American Medical Association, seems to disqualify it for that purpose.

In this connection it is stated that European Surgeons admit that "surgery in America is best." As to that point, the JOURNAL does not feel qualified to take issue, but feels safe in saying that surgery in America is "the most." Probably in none of the European countries are surgical operations so general as in this country, for the simple reason that no where else are there so many well-to-do people, and outside of practice work in hospitals, poorer people are fortunate in that they are not the marked ones for the scalpel.

It is stated on good authority that both French and English surgeons who have recently visited this country state that surgical methods in America are better than those in Europe. The quickness with which operations are done in this country seem to particularly strike the attention of the foreigner. But no wonder the American surgeon hurries the operation along,—he has to get one out of the way of the next.

TONSILS GOOD FRIENDS

Algernon Coolidge, Jr., M. D., in a resent lecture before Harvard Medical School condemned the practice of the hasty removal of tonsils. He defined a very important function that he considered the tonsil performed in the

throat; that is, that these tissues absorb the disease-bearing germs which gain entrance through the mouth and nose. In this view there is nothing new, only it is refreshing to hear another sensible man speak out once in a while.

Some of his other theories may be more original, however, for he states: "That it is highly probable that here in the crypts of the tonsils is generated the anti-toxin that makes us immune from certain diseases that surround us."

Another evidence of unusual intelligence is observed in the following statement: "Up to twenty years ago, there were no operations for removal of tonsils. Yet, it is not a new disease that affects this tissue and gives reason for the modern operation. The good results of such operations and the fact that it involves little or no danger tempts the physician to recommend removal of the tonsil too frequently." Again he states: "A perfectly healthy tonsil would be found to contain innumerable germs and bacteria upon examination. This is the part I believe the tonsils play in the mouth. Instead of the germ passing into our system, they sieze readily upon the tonsil unless there is leakage from the crypts into the tissue and substance back of them, the tonsils care for the bacteria and do no harm."

SPLENDID EXAMPLE

The Illinois Association in subscribing $100 to the A. O. A. Press Bureau has set an example for other states. Although confronted with a legislative situation which is absorbing its thought and energy and means, the Association has taken the action shown in the following letter which the JOURNAL wishes to present to the attention of every officer of every state organization:

"In view of our appreciation of the facts as stated in the accompanying letter, of our realization of the good work that is being done by the Department of Publicity of the A. O. A. and our desire that the profession of this State co-operate to the full extent of its ability and duty with the efforts of the A. O. A., also of the urgent need in this state of publicity of such a character as will give the public better understanding of our prefessional spirit and worth, therefore we advise that you send for the next four months, twenty-five dollars per month to the secretary of the A. O. A. to be used by the publicity Department of said organization. We further advise that a copy of both this action and of the accompanying letter be sent to Dr. Edgar Comstock, Chairman of the Publicity Committee of the I. O. A. in order that said committee may avail itself of the advantage of this affiliation.

(Signed) Edgar Q. Thawley, D. O., President, I. O. A., Canada Wendell, D. O., Emma C. Fager, D. O., E. M. Browne, D. O., J. J. Moriarty, D. O., C. P. Parenteau, D. O., J. R. McDougall, D. O., Trustees I. O. A."

(This letter is addressed to A. P. Kottler, Secretary of the State Organization).

(Since writing the above. Texas has sent in the same amount, $25 a month for four months. Fine).

PERSONALS

L. B. Mason announces that he will continue the practice of osteopathy in the Sherlock Building, Lethbridge, Alberta.

Alfred M. Smith of Hagerstown, Md. announces that he has sold his practice and good will to J. S. Johnson, A. S. O. 1912 and that he will remain in association with Dr. Johnson until April 1st, after which time he intends to locate permanently in Charlestown, W. Va., where he has formerly maintained a branch office. Dr. Smith holds the first certificate of osteopathic registery issued by W. Va.

Drs. Francis A. and Edith S. Cave announce the removal of their Brookline office to the Huntington Chambers, Boston.

Charles S. Green, who has been associated with George J. Helmer at 187 Madison Ave. for a number of years, announces the removal of his office to Vanderbilt Ave. Bldg., 51 E. 42d St., on March 1st.

Ira S. Frame and wife, who practiced a dozen years or more in Philadelphia, and have been spending the past six months in England, have recently opened offices in Torquay, a winter resort on the south English coast. He reports that osteopathy is well thought of in England and that many other qualified osteopathic physicians are needed there.

Earle S. Willard of Philadelphia is taking special laboratory work in biology and pathology at the Medical Department of the McGill University, Montreal. Dr. Willard's brother, Wm. C. Willard, is Professor of Railway Engineering at that institution.

J. W. Hofsess of Kansas City is confined to a sanitarium, suffering from Pernicious Anemia. He will have the best wishes of his many friends and hopes for his complete recovery.

Dr. Harold Glasscock has spent a number of weeks in New York hospitals the past winter fitting himself for hospital work preparatory to taking charge of the institution which he is soon to open at Raleigh, N. C. He has spent the greater part of the past three or four years in this preparation and the study of hospital management and proposes to conduct a place second to none; more extended notice of which will be printed in the next issue.

Dr. Hershel L. Conner of St. Louis recently passed through New York on his return from Europe where he had spent six months doing

work in the large hospitals of the continent, particularly in Vienna. While he regards the medical profession in Europe as being very weak on treatment and the surgeons very much slower and less skillful than those in this country, he feels that his time and study there was well spent.

M. F. Hulett of Columbus, O., has constructed a "rack" which is modification of that used by Abbott and has perfected his technique and knowledge of the subject so that he is qualified to handle cases of scoliosis by that method.

A. H. Gleason, according to the Worcester (Mass.) papers has had a remarkable experience in stopping a case of persistent hiccoughs in a man of sixty-four who had suffered the attack for five days and nights. The first treatment stopped the trouble temporarily, but it returned the following day when the second treatment was given, affording permanent relief. The estimate is that the sufferer had suffered about 75,000 of these spasms within the five days. It is needless to say that all of the drug remedies had been exhausted before osteopathy was tried.

J. L. James of Springfield, Mo., recently lectured before the Missouri Branch of the Federation of Mothers' Clubs in his city, on "How to teach Sex Hygiene. The local papers state that the address was well received.

MISS LYNE IN OPERA

The papers of the West coast recently gave very flattering accounts of the singing and reception everywhere met with by Miss Felice Lyne who is a leading prima donna with the Quinlan Grand Opera Co. She has within the year toured South Africa and Australia and is now on her way through Canada back to London.

Miss Lyne's grandmother, father and several aunts are well known osteopathic physicians and the profession feels keenly interested in her remarkable success.

DR. FECHTIG TO REMOVE TO FLORIDA

It is with no little regret that the Journal announces that Dr. St. George Fechtig has determined to erect a sanitarium on his extensive property in Florida and beginning with the fall, make that the field of his operation. He has demonstrated in his Lakewood house that an institution characterized by straight definite osteopathic procedures can succeed and he believes the Florida field offers even greater advantages for institutional work.

In the mean while he will continue his house at Lakewood and his private practice in New York.

PRESS BUREAU WORK

The McClure Publications have notified the A. O. A. Press Bureau, in reply to its objection, that they will accept no further advertisements from the National School of Chiropractic.

These include: *McClure's Magazine, The Ladies' World, Harper's Weekly.*

PARTIAL DEAFNESS COURSE

Dr. Jas. D. Edwards announces that Dr. Herman F. Goetz will assist him in conducting short post graduate course, lectures and clinic demonstrations to osteopathic physicians on his technique in treatment of Catarrhal Deafness. Those interested should correspond with him, Century Bldg., St. Louis.

CASE REPORT CARDS

A. P. Howells, D. O., of Albany, Oregon, writes that he has had numerous inquiries for his case report cards which were mentioned in the December issue, and wishes it stated that he will send samples on request and that whatever profit derived from the sales of the stock on hand will be turned over to the Research Institute fund.

AN ANATOMICAL CHART

Two remarkably graphic drawings, presenting particularlythe spinal and sympathetic nervous system, have just been put upon the market, copy-right by Drs. G. WW. Reid and F. P. Millard. The drawings are by Dr. Millard which appear to be very accurate and complete and the color work of the engraving brings out and contrasts all of the structures and their relations to each other in a very satisfactory manner. The chart may be ordered from either of the doctors above mentioned, and should prove very helpful in study and useful for demonstration.

MARRIED

In Brooklyn February 18th, Dr. Lazarus Banker Allabach and Miss Florence Estella McNair.

At Haywards Heath, England, Dr. Jean Seymour Hough, recently of Philadelphia, to Mr. Harold Ross Collins. Dr. Hough until about two years ago practiced osteopathy in Philadelphia and has since been in practice in England.

Dr. Charlotte W. Weaver and Mr. Walter E. Wingerter of Akron, Ohio. At home at the Harwin, that city after February 28th.

BORN

To Dr. and Mrs. Daniel N. Morrison of New York, March 9th, a son, Daniel Neil 2nd.

To Dr. and Mrs. L. Guy Baugher, Harrisburg, Pa., on February 15th, a son. The son and mother will hereafter celebrate their anniversaries on the same day.

DEATH OF DR. HAYDEN

Whereas: In the exigencies attendant upon our human existence, the life of Dr. William J. Hayden has been so suddenly terminated, and,

Whereas: He occupied a useful, honored

position in the faculty, the college, the profession and the community his loss to which we know to be irreparable,

Therefore: Be it resolved that we, as members of the Faculty of the Pacific College of Osteopathy, in meeting assembled, recognizing this loss, testify to the high moral character of Dr. Hayden, his worth to the college and the profession, and the standard he has set in ability, unfailing loyalty and fidelity to services of his alma mater.

Be it further resolved that we perpetuate his memory in spreading these resolutions on the records of the meetings of the faculty and in sending copies to the osteopathic publications and a copy to Dr. Daisy D. Hayden.

C. A. WHITING, D. O., *Chairman.*
C. H. PHINNEY, *Secretary.*

On February 21st at his home in Des Moines, Ia., Dr. James A. Still, age 55 after a few day's illness. Dr. Still was a brother of Dr. S. S Still and a nephew of Dr. A. T. Still and has resided in Des Moines about twelve years. He is survived by a widow and two children.

At his home in Winter Hill, Mass., February 17th, the father of Dr. Mary Emery.

SAUNDERS' NEW CATALOG

The well known publishers, W. B. Saunders, W. Washington Square, Philadelphia, have recently issued a new catalog of many of their new and very remarkable works of interest to all physicians. This Catalog may be had upon application to the firm. Many of their books have been advertised to the profession on the cover page of the JOURNAL. Saunders invite our readers to open a charge account and keep posted as to the latest in Medicine and Surgery.

"SPIRITUAL HEALTH"

Notices have been received that the Shapespeare Press, 114 East Twenty-eighth Street, New York, has recently brought out a little volume under the above name from H. F. Wright, D. O., El Paso, Texas. Ministers and others who have received the manuscript speak of the work in the highest terms. Price, $1.00 per copy.

SOLID COMFORT IN THE STORM BINDER

As any physical depression is apt to be accompanied by increased nervousness, the dread commonly noted among those for whom an abdominal supporter or binder is indicated is but natural to be exacted.

Dr. Katherine L. Storm, of Philadelphia, has been fortunate enough to devise a binder and supporter which can be worn comfortably by those nervously depressed. This is a very great advantage, and one which physicians will readily appreciate. No whalebone or rubber elastic is used in this appliance.

MAY RECOGNIZE ADVERTISING

The recent meeting of the medical profession in Chicago noticed in the last issue, discussed a number of subjects of far-reaching importance, not the least among the number being "raising the ban on profession advertising." Advertising men for a number of years have been arguing that the way to put the faker out of business is for those who had something really to advertise to do so.

Recently very ethical physicians have been able to get much personal matter in the newspapers and the inconsistency of permitting this and frowning upon all other forms seems to have aroused the medical profession and the proper committee recommended to the House of Delegates which will pass on it at the Atlantic City meeting of the A. M. A. next June, the advisability of permitting much greater latitude in the matter of advertising within the profession.

APPLICATIONS FOR MEMBERSHIP

OHIO

Hess, C. F. (A), 336 W. Tuscarawas St., Canton.

MASSACHUSETTS

Flansburgh, R. D. (MC), The Richardson, Leominster.

SOUTH CAROLINA

Moore, Sara A. (A), 1711 Gervais St., Columbia.

WISCONSIN

McCormack, J. J. (Ac), 629 North Eighth St., Sheboygan.

CANADA—QUEBEC

Perry, Florence Jarman (Ph), 851 Dorchester St., Montreal.

CHANGES OF ADDRESSES

Albright, Chester W., from 907 East 75th St. to Consumers Co. Bldg., Chicago, Ill.

Barrows, Florence Judd, from Findlay, Ohio, to former address, Kingman, Kansas.

Catlin, D. B., from Mankoto to Germania Life Bldg., St. Paul, Minn.

Clements, Gertrude M., from Memphis to Welder Bldg., Victoria, Texas.

Cooke, H. T., from Sweetwater to Mineral Wells, Texas.

Cornell, Leon L., from St. Louis, Mich., to Falls City, Nebraska.

Galbreath, Wm. Otis, from 1524 Chestnut St. to Land Title Bldg., Philadelphia, Pa.

Galivan, Kathryn L., from Ivesdale to 304 S. Wabash Ave., Chicago, Ill.

Gartrell, Seymour C., from Kirksville, Mo., to Ackley, Iowa.

Hornbeck, E. G., from Upper Montclair, N. J., to Philips Bldg., Rocky Mount, N. C.

Kelso, Sophronia B., from Hill City, Kansas, to Shubert Bldg., Kansas City, Mo.

McCartney, L. H., from Columbus, Ohio, to Hoxie, Kansas.

McCleery, Ben H., from Cherokee, Iowa, to Mankota, Minn.

Mason, L. B., from Edmonton to Sherlock Bldg., Lethbridge, Alberta.

Miller, J. R., from 410 N. Washington St. to Lyric Arcade Bldg., Rome, N. Y.

Miller, Samuel B., from 1060 Third Ave. to Granby Block, Cedar Rapids, Iowa.

Moore, George W., also has offices in Real Estate Trust Bldg., Philadelphia, Pa.

Ray, Cyrus N., from Shreveport, La., to Abilene, Texas.

Schreiner, John S., from Coyne Bldg., to Palmer Bldg., Webb City, Mo.

Warren, E. D., from Bellingham, Wash., to Savonburg, Kansas.

Wingerter, Charlotte Weaver, from Hamilton Bldg. to 214 S. College St., Akron, Ohio.